The Disconto-Gesellschaft and German Industrialization:

A Critical Examination of the Career of a German Universal Bank, 1851-1914.

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Abbreviations

a.D. = ausser Dienst (retired)

Adca = Allgemeine deutsche Credit-Anstalt

A.E.G. = Allgemeine Electricitäts-Gesellschaft

AG = Actien-Gesellschaft (Public Limited Company)

AGM = Annual General Meeting

Az. = Aktenzeichen (file number)

B. A. S. F. = Badische Anilin- und Soda-Fabrik

BBA = Bergbau-Archiv beim Deutschen Bergbaumuseum, Bochum

CVDI = Centralverband deutscher Industrieller

DHHU = Dortmund-Hörder Hüttenunion

EGM = Extraordinary General Meeting

Fb. = Findbuch (master list of files)

GBAG = Gelsenkirchener Bergwerks-Actien-Gesellschaft

GmbH = Gesellschaft mit beschränkter Haftung (private limited company)

GStA PK = Geheimes Staatsarchiv Preussischer Kulturbesitz, Berlin

H A Krupp = Historisches Archiv, Fried. Krupp GmbH, Essen

IG = Interessengemeinschaft (profits pooling agreement)

IHK = Industrie- und Handelskammer (Chamber of Commerce and Industry)

KGaA = Kommanditgesellschaft auf Aktien (untranslatable; see text)

M. A. N. = Maschinenfabrik Augsburg-Nürnberg

MfHGuöA = Ministerium für Handel, Gewerbe und öffentliche Arbeiten (Prussian Ministry for Commerce, Industry and Public Works)

Nds StA Wolf. = Niedersächsisches Staatsarchiv in Wolfenbüttel

OBAB = Oberbergamtsbezirk (District of the chief mining regulatory authority)

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OHG = Offene Handels-Gesellschaft (joint-stock company with unlimited liability)

P. L. M. = Chemin de Fer de Paris à Lyon et la Mediterranée (Paris-Lyons-Mediterranean Railway)

Rep. = Repertorium (master list of files)

RWKS = Rheinisch-Westfälisches Kohlen-Syndikat (the Rhenish-Westphalian Coal Cartel)

RWWA = Rheinische-Westfälisches Wirtschaftsarchiv, Cologne

RWWB = Rheinisch-Westfälische Wirtschaftsbiographien

SBHA = Stenographische Berichte des Hauses der Abgeordneten

SBNDRT = Stenographische Berichte des Norddeutschen Reichstages

SBRT = Stenographische Berichte des Reichstages

StA = Stadtarchiv (municipal archive)

StUB = Stadt- und Universitätsbibliothek (municipal and university library)

UEG = Union Electricitäts-Gesellschaft

W A = Werksarchiv (section of H A Krupp)

WWA = Westfälisches Wirtschaftsarchiv, Dortmund

ZStA = Zentrales Staatsarchiv (the East German central state archives)

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Money

Until 1875 the currency in North Germany was the thaler:

1 thaler = 30 groschen = 360 pfennigs

The prevailing monetary unit in South Germany was the gulden. In 1875 the mark was introduced, at the rates

1 thaler = 3 marks

1 gulden = 2 marks

1 mark = 100 (new) pfennigs

The international exchange rates were, at pre-war parity:

1 thaler = 3 marks = 3 English shillings = 3.75 francs

1 mark = 10 groschen = 1 English shilling = 1.25 francs

I have used thalers or marks depending on the context; thalers can easily be converted to marks by multiplying by three.

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I. Introduction

A. Subject of the Thesis.

In a recent article (1986), Richard Tilly has referred to universal banking as

> That successful combination of commercial and investment banking activities so well exemplified by the operations of such large Berlin banks as the Deutsche Bank or the Disconto-Gesellschaft in the decades before World War One.[1]

The argument of my thesis is that universal banking, as exemplified by the Disconto-Gesellschaft, was by no means successful in fostering Germany's industrial development. The Disconto-Gesellschaft lent readily to poorly run companies, such as the Dortmunder Union, and reluctantly if at all to well run companies such as Krupp. Closely connected with this question is the degree of control which German banks are presumed to exercize over industrial companies.[2] I propose to show, in particular in the case of the Gelsenkirchener Bergwerks-Actien-Gesellschaft, that competently run companies enjoyed as much independence as

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1. Richard H. Tilly "German Banking, 1850-1914: Development Assistance for the Strong" in: The Journal of European Economic History (Rome, 1986) p. 113; I would like to thank Dr. P.K. O'Brien of St. Antony's College, Oxford, for bringing this article to my attention.

2. Georg Bernhard, Meister und Dilettanten am Kapitalismus im Reiche der Hohenzollern (Amsterdam, 1936) pp. 111-114; V.I. Lenin, Imperialism, the Highest Stage of Capitalism (Moscow, 1978) p. 45 (echoing the view of Rudolf Hilferding); Rudolf Hilferding, Finance Capital. A Study of the Latest Phase of Capitalist Development ed. Thomas Bottomore, trans. Morris Watnick and Samuel Gordon (London, 1981) pp. 94-95; cf. the more sensible remarks in Werner E. Mosse, Jews in the German Economy: the German-Jewish Economic Elite 1820-1935 (Oxford, 1987) p. 262.

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they could wish, even if they were wholly dependent on one bank for their financial requirements; companies in trouble, on the other hand, were largely at the mercy of the banks. This is no different from other countries, where banks can only be companies' creditors; I want to emphasize that although German banks could and did take equity stakes in client companies, ownership did not automatically translate into control.

B. Previous Discussion of Universal Banks.

Most writers on German economic history have assumed that universal banks played a major role in the rapid growth of German industry in the nineteenth century. Sir John Clapham says, "In no country had the alliance of banking and industry been closer," and quotes with approval the remarks of Johann Jacob Schuster, a director of the Dresdner Bank, before the banking inquiry of 1908:

> In Germany our banks are largely responsible for the development of the Empire, having fostered and built up its industries . . . . To them, more than to any other agency may be credited the splendid results thus far realized.[3]

William O. Henderson has echoed these sentiments, writing:

> The credit banks undoubtedly fostered Germany's industrial expansion. It was with their help that money was raised for state and municipal loans, for the completion of the railway network, for the construction of public works, for the establishment of new mining and manufacturing enterprises and for the promotion of shipping and overseas trade.[4]

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3. John H. Clapham, The Economic development of France and Germany, 1815-1914 (Cambridge, ⁴1936) p. 390.

4. William O. Henderson, The Rise of German Industrial Power 1834-1914 (London, 1975) p. 129.

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Martin Kitchen has written of the 1850's:

> Banks played an important role in these critical years. Although the amount of share capital they controlled was by no means overwhelming, it was important, and without short-term bank loans few of the great German firms could have expanded so fast or have survived the depression . . . Bankers were on many important boards and the beginnings of the close association of bank capital and industrial capital, which is so characteristic of Germany by the late nineteenth century, can clearly be delineated.[5]

These authors are reflecting a debate about universal banks which took place in Germany at the turn of the century. By "universal banks", I understand banks which combine the "irregular" banking functions of investment banks, especially securities underwriting but also stock and share brokerage, with the "regular" functions of commercial banking, such as current accounts, deposit taking, and extending accommodation through discounting bills of exchange. There is naturally some overlap, but a German universal bank can best be understood as a bank combining the functions of Barclays Bank and N. M. Rothschild. A result of the debate has been that nearly every writer uses his own term to refer to universal banks: Ernst Sattler, Paul Model, and Ernst Loeb call them Effektenbanken ("securities banks"); Adolf Weber and Otto Lindenberg call them "speculation banks"; Otto Jeidels, arguing that the most important element of these banks is not their securities operations, but their current account lending, calls them "credit banks", and is followed in this by Hugh

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5. Martin Kitchen, The Political Economy of Germany 1815-1914 (London & Montreal, 1978) pp. 96-97.

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Neuburger and Houston Stokes; Richard Tilly says this is nonsense, because all banks extend credit, and calls them "mixed banks". We also find the expression "Crédit Mobilier banks",which I prefer, because it links these banks to their origins, but I have chosen "universal banks" because this expression is currently used by the banks themselves.

The earliest comments on universal banks were critical ones: as early as 1858 Max Wirth numbered the Crédit Mobilier, the Darmstädter Bank, and the Austrian Credit-Anstalt among the most unsound banks in Europe.[6] The Berlin professor of national economy, Adolf Wagner, and his pupils - Ernst Sattler, Paul Model, and Ernst Loeb - were among the fiercest critics of universal banks, since they felt that universal banks put small depositors' funds at risk by investing in unsound industrial ventures.[7] The turning point in this debate came in 1902 when Adolf Weber published his Habilitationsschrift (a type of second doctoral dissertation) Depositenbanken und Spekulationsbanken. Whereas Adolf Wagner and his followers had confined their attention to Germany and pointed out the risks inherent in a system of universal banks, Adolf Weber contrasted English banks of deposit with German speculation banks - he intentionally used the derogatory term "speculation" in a positive sense. Weber argued that the German economy had

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6. Max Wirth, Geschichte der Handelskrisen (Frankfurt/M., ²1890) pp. 281-298.

7. Paul Model, Die grossen Berliner Effektenbanken (Jena, 1896) (edited by Ernst Loeb and introduced by Adolf Wagner).

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outperformed the British economy in recent years because of the difference between the two countries' banking systems. Summing up his views, Weber even argued that a common view (held by Jeidels, Gerschenkron, and Neuburger and Stokes, among others[8]) that German universal banks favoured heavy industry at the expense of export industry was mistaken:

> I want to emphasize that it is a particular advantage of the German banking system that it is closely linked with industry and commerce and feels solidarity with them. The brilliant development of our industry and our foreign trade would have been unthinkable without the active and devoted intervention of the great deposit and speculation banks. While English industry has often been dependent for its capital needs on the mood of the moment, the German banks have followed a generous industrial policy since the first days of their existence . . . . From 1887 to 1912 German foreign trade increased by 225%, the trade of the "central shop of the world", Great Britain, by only 113%; no one who is acquainted with the circumstances will be able to deny that the German banks contributed their fair share to these successes.[9]

Weber thoroughly researched the matter, reading numerous annual reports and company histories, as well as the secondary literature, yet he never mentioned the two cases which I think show the German banking system at its weakest, namely Krupp and the Dortmunder Union. Admittedly the early financial history of Krupp was not known in 1902; but the

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8. Otto Jeidels, Das Verhältnis der deutschen Grossbanken zur Industrie mit besonderer Berücksichtigung der Eisenindustrie (Leipzig, 1905) pp. 270-271 (= Gustav Schmoller and Max Sering, eds., Staats- und sozialwissenschaftliche Forschungen, vol. 112) Hugh Neuburger and Houston H. Stokes "German Banks and German Growth: An Empirical View" in: The Journal of Economic History (New York, September 1974) vol. 34 p. 729.

9. Adolf Weber, Depositenbanken und Spekulationsbanken. Ein Vergleich deutschen und englischen Bankwesens (Munich, Leipzig, ³1922) p. 356.

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case of the Dortmunder Union supplied much of the ammunition for Otto Lindenberg's polemic against the Disconto-Gesellschaft in 1903, Fünfzig Jahre Geschichte einer Spekulationsbank. Weber can also be very selective in the facts he discusses: he tries to show the stability of German universal banks by citing the share prices of the Deutsche Bank and the Disconto-Gesellschaft during the crisis of 1901, yet does not cite the share price of the Dresdner Bank, which was very seriously affected.[10] Although Weber's book is a well-researched and well-argued thesis, I think it has weaknesses which makes it far from the last word on the subject.

Other writers on universal banks followed in Weber's footsteps. Otto Jeidels' work on the relationship between banks and industry is more descriptive than a contribution to the debate.[11] Johann Plenge, however, wrote a still classic re-appraisal and defence of the French Crédit Mobilier, and in his introduction to later editions said that his contribution was part of the defence of universal banks argued by Weber, himself, and Jacob Riesser.[12] Riesser wrote what is still the most authoritative work on

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10. Weber, Depositenbanken und Spekulationsbanken p.9.

11. Otto Jeidels, Das Verhältnis der deutschen Grossbanken zur Industrie mit besonderer Berücksichtigung der Eisenindustrie (Leipzig, 1905) (= Gustav Schmoller and Max Sering, eds., Staats- und sozialwissenschaftliche Forschungen vol, 112).

12. Johann Plenge, Gründung und Geschichte des Crédit Mobilier. Zwei Kapitel aus Anglagebanken, eine Einleitung in die Theorie des Anlagebankgeschäftes (Tübingen, 1903).

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German banking.[13] Riesser was a member of the management (Vorstand) of the Bank für Handel und Industrie (the Darmstädter Bank), and much of the book is written from the viewpoint of someone defending the universal banks against their critics. Riesser does mention the case of Krupp, but dismisses it by saying that in its early period Krupp was never a very large company.[14] (I think this remark is not valid, because in the period 1850-1870, when Krupp had many conflicts with his bankers, Krupp was one of the five largest, if not the largest, employers in Germany.)

Criticism of universal banks did continue. Ernst Korach mourned the demise of the private banks and of the private-bank-dominated Frankfurt capital market and regretted their replacement by Berlin universal banks.[15] An unusual critic of universal banks is Paul Wallich, since his father, Hermann Wallich, was one of the first directors of the Deutsche Bank (Paul Wallich's son, Henry C. Wallich, was until 1986 a member of the Federal Reserve Board). In his book on banking concentration, Wallich said that concentration in German banking was becoming excessive, and suggested a break up of universal banks along functional

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13. Jacob Riesser, Die deutschen Grossbanken und ihre Konzentration im Zusammenhang mit der Entwicklung der Gesamtwirtschaft in Deutschland (Jena, ⁴1912).

14. Riesser, Deutsche Grossbanken p.5 note 1.

15. Ernst Korach, Das Deutsche Privatbankgeschäft. Studien zu seiner Geschichte und heutigen Stellung (Berlin,1910) pp. 50-54.

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lines, into commercial banks and investment banks.[16] The collapse of the Darmstädter-Nationalbank on 13 July 1931 temporarily revived the debate; the American Warburgs proposed in August 1931 a private sector rescue for the Darmstädter-Nationalbank, whereby its branch network would be sold to the Dresdner Bank and the Darmstädter-Nationalbank would become a pure banque d'affaires. (The Warburgs' view should be given particular weight since not only were they very skilled financiers, but Paul Warburg, as the architect of the American Federal Reserve System, was a major banking theoretician.) The economic commentator Ernst Wagemann in January 1932 also called for the separation of commercial from investment banking.[17] These reform proposals, however, led nowhere.

Naturally German bankers have not been slow to praise their particular banking system. Georg Solmssen of the Disconto-Gesellschaft said in 1916:

> Only because our banks, in addition to taking care of the regular business, devoted themselves with full powers to raising capital and managing large industrial operations, could industry develop on the broad basis which is indispensable for some industrial branches, such as railways, collieries, ironworks, and large shipping companies. The close connection between banks and industry is precisely the basis of the unexampled development which German industry has undergone . . . . Anyone who

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16. Paul Wallich, Die Konzentration im deutschen Bankwesen. Ein Beitrag zur Geschichte der gegenwärtigen Wirtschaftsorganisation (Stuttgart and Berlin, 1905) p. 168 (= Münchener Volkswirtschaftliche Studien ed. Lujo Brentano and Walther Lotz, vol. 74).

17. Harold James, The Reichsbank and Public Finance in Germany 1924-1933: A Study of the Politics of Economics during the Great Depression (Frankfurt/Main, 1985) pp. 210-211, 302-303.

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> before the war conversed with English or French industrialists heard from them again and again the complaint that it was impossible for them to have credits and capital placed at their disposal for new industrial enterprises as was usual in Germany, even though both countries for decades vastly exceeded Germany in wealth of capital.[18]

Dr h.c. Hermann Josef Abs has echoed these sentiments, describing the German banking system as the envy of all other nations.[19]

Max von Schinckel, a director of the Norddeutsche Bank of Hamburg, and from 1895 a partner of the Disconto-Gesellschaft, has retailed the following remarks from an ironmaster from the English east coast (Middlesbrough, I suppose). The Hamburg bank was developing iron ore mines in northern Norway shortly before the First World War, and to make the venture pay - the ore had to be wrested from frozen earth - it wanted ironworks to conclude ten year contracts. The English ironmaster said:

> We would like to make ten year contracts with Sydvaranger; but we do not even know what will happen to us in the next few years. Our company is a family company, our shares are not traded; we must be so careful in our finances that if we ever were forced to liquidate, we could always pay our shareholders 100%. But now Gelsenkirchen, Deutsch-Luxemburg and Aug. Thyssen have built such huge new technically advanced ironworks on the site of the minette ore that we will not be able to compete if we do not build similar totally new plants. But we do not have the land to do that; and we lack the

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18. Georg Solmssen, "Das Verhältnis zwischen Industrieunternehmungen und Banken" in: Solmssen, Beiträge zur Deutschen Politik und Wirtschaft 1900-1933. Gesammelte Aufsätze und Vorträge (Munich and Leipzig, 1934) p. 455.

19. Hermann J. Abs, "Konzentrationsbestrebungen im deutschen Bankwesen" in: Gesellschaft für Unternehmensgeschichte, ed. Die Konzentration in der deutschen Wirtschaft seit dem 19. Jahrhundert (Wiesbaden, 1978) p. 45 (=Zeitschrift für Unternehmensgeschichte, Beiheft 11).

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> money even more. In Germany industry has been able to grow with revolving credits (mobilen Crediten) from the banks; for fifty years the German banks have plowed and manured the industrial soil of their country. In England industry has been dependent on itself during these fifty years; it can only pay for expansion and improvement out of its own profits. England has no banks whose bye-laws allow them to lend to industry. The consequence is that our works are antique compared to the German ones and every year our production falls behind. That is the reason why we can only invest for the short term.[20]

I do not agree with the English ironmaster's explanation of his industry's problems, and I think his problems lie elsewhere: because his company is still a family company, he has to follow a high profit, high dividend policy and cannot finance further development out of earnings. German industry was more ready to exploit the advantages offered by the joint-stock form. It is true that the German iron industry (as opposed to the coal industry) was dominated by family firms, Krupp, Stumm, Thyssen, Stinnes, Röchling, de Wendel, Haniel; but an even more striking development is the emergence of the hybrid family enterprise. A core firm would remain under family control - usually this firm was engaged in trading, an activity which consumed little capital but could ensure immense control - and the concern would then branch out and exert control over joint-stock allies. Thyssen and Stinnes were particular masters of this type of concern: August Thyssen began with the small family company Thyssen & Co., and was able to control the Gewerkschaft Deutscher Kaiser and the Schalker Gruben- und

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20. Max von Schinckel, Erinnerungen [Hamburg, 1928] pp. 245-246.

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Hütten-Verein at the beginning of his career. The Haniels operated a trading company in tandem with their control of the Gutehoffnungshütte; and the Cologne scrap metal merchant Otto Wolf used his family trading company of the same name as the centrepiece of a concern which included the Vereinigte Stahlwerke van der Zypen and the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb. As early as the 1870's we can see the development in the German iron industry of family concerns which include companies under full family control plus joint-stock companies which are under the influence of the same family. Through these joint-stock companies - and from the 1880's, through issuing bonds on behalf of collieries - the German iron industry was more successful at supplying its capital needs than its English competitors.[21]

In recent years the debate has revived, carried on in a series of articles by High Neuburger and Houston Stokes. Using a series of current account figures developed by Ekkehard Eistert, they have done an econometric analysis and concluded that the overall effect of the universal banks was

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21. The trading companies were first set up in the early 19th century to evade state price controls. Carl-Ludwig Holtfrerich, Quantitative Wirtschaftsgeschichte des Ruhrkohlenbergbaus im 19. Jahrhundert. Eine Führungssektoranalyse (Dortmund, 1973) pp. 28-29 (= Untersuchungen zur Wirtschafts, Sozial- und Technikgeschichte Vol. 1) This concept of the hybrid firm is taken from Werner Mosse, but I think these hybrid structures are found in Gentile enterprises, as well as Jewish ones: Werner E. Mosse, Jews in the German Economy: The German-Jewish Economic Elite 1820-1935 (Oxford, 1987) pp. 134-135. As late as 1924 Felix Pinner said that the coal-trading firm was one of the most profitable sections of the Stinnes concern: Felix Pinner, Deutsche Wirtschaftsführer (Charlottenburg, 1924) p. 242.

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negative. Their approach has been criticized by Rainer Fremdling and Richard Tilly. Fremdling and Tilly first make the valid point that Neuburger and Stokes have little understanding of German banking history, since they assume that there were no German joint-stock banks before 1848, thus ignoring the Bayerische Hypotheken- und Wechsel-Bank (established 1835), the Leipziger Bank (founded 1838), the Preussische Bank (converted into a joint-stock operation in 1846; henceforth referred to as the Bank of Prussia), and the Anhalt-Dessauische Landesbank (founded 1846). Fremdling and Tilly also point out that Eistert does not have the actual current account figures, but is back-calculating from the figure for Debitoren, estimating that half the figure of Debitoren is current account lending. In addition, these figures do not take into account how long the loans were outstanding: three months, six months or a year or more. Fremdling and Tilly also take issue with Neuburger and Stokes' claim that current account credit was one of the cheapest forms of credit; it actually could prove very expensive. Finally, they point out that banks expected customers to generate an annual volume of business many times higher than the amount of credit outstanding. The norm was a revolving credit arrangement. Felix Hecht showed in Mannheim that the banks' debit and credit sides were almost identical, and this has been confirmed for Cologne by Tilly. Fremdling and Tilly concluded by suggesting two approaches to study the question of German universal banks: we can either study how individual industrial enterprises

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raised funds; or we can examine the growth in the money supply, the role of central banking, and changes in prices.[22]

Although Neuburger and Stokes' work bears out my own arguments, I think their methods are flawed and I have more sympathy with the view of Fremdling and Tilly. Fremdling and Tilly's point about short-term credit costing more than long-term credit is very telling; what made short-term credit expensive was not the interest rate (this was often very low, which may have led Neuburger and Stokes to think this form of credit was cheaper), but rather the numerous bank charges levied on opening, continuing, and renewing the credit. A correspondence between the Disconto-Gesellschaft and the Roumanian Railway Company about a short term credit has been preserved, albeit in a pamphlet by an anti-Semitic muckraker, Plack-Podgòrski. Although this is a flawed pedigree I accept the documents reproduced in the pamphlet as genuine, because internal evidence confirms what we know from more legitimate sources: Plack-Podgòrski's

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22. Hugh Neuburger and Houston H. Stokes, "German Banks and German Growth, 1883-1913: An Empirical View" in": The Journal of Economic History (New York, September 1974) vol. 34, pp. 710-731; Neuburger and Stokes, "German Banking and Japanese Banking: A Comparative Analysis" in: Journal of Economic History (New York, 1975)[35]pp. 238-252; Neuburger and Stokes, "German Banks and German Growth: Reply" in: Journal of Economic History (New York, June 1976)[36]pp. 425-427; Neuburger and Stokes, "German Banks and German Growth: Reply to Komlos" in: Journal of Economic History (New York, June 1978) vol. 38 pp. 480-483; Rainer Fremdling and Richard Tilly, "German Banks, German Growth, and Econometric History" in: Journal of Economic History (New York, June 1976) vol. 36 pp. 416-424; John Komlos, "The Kreditbanken and German Growth: A Postscript" and "Rejoinder" in: Journal of Economic History (New York, June 1978) vol. 38, pp. 476-479 and 483-486.

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records confirm the proportion of lending between the Disconto-Gesellschaft and Bleichröder to the Roumanian Railway Company, namely 2:1, which we know of from Fritz Stern. The correspondence between the Disconto-Gesellschaft and the Roumanian Railway Company, preserved in this pamphlet, consists of six letters written between August and December 1872, discussing credits mounting up to 10 million marks. The terms were as follows: the interest rate was 6% per annum, the Disconto-Gesellschaft also charged a fee of 4% to open the credit, and charged a monthly fee of $^{1}/_{2}$% so long as the credit continued; but in the case of the emergency loans of two months extended in October 1872, the Disconto-Gesellschaft charged a monthly fee of 2%. Four million marks of these loans were secured by estates which had formerly belonged to Strousberg and were now mortgaged to the Roumanian Railway Company; the remainder appears to have been unsecured. So although the interest charged could be fairly low, the numerous fees could make short term credits extremely expensive.[23]

I think Fremdling and Tilly are correct to emphasize a further flaw in the reasoning of Neuburger and Stokes, namely they assume that current account lending was the major way German industry raised funds. Neuburger and

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23. Rudolf Plack-Podgòrski, Pharisäer und Heuchler, oder die Leuchten des deutschen Parlaments und die Stützen des Staates. Geschildert nach dem Ahlwardtschen Aktenmaterial und anderen Quellen als eine Ergänzung seiner öffentlichen Anklagen im Deutschen Reichstage unter wortgetreuem Abdruck von Akten und Belegen (Berlin, ^{3}[1893]) pp. 40-43, 49. Fritz Stern, Gold und Iron: Bismarck, Bleichröder and the Building of the German Empire (New York, 1977) p. 368.

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Stokes are somewhat misleading in their reply to this criticism. They say that it was a practice "well known in banking and industry circles of the period" and cite the evidence of Otto Jeidels, "a leading figure in the Berliner Handels-Gesellschaft for many years".[24] What Neuburger and Stokes do not say is that they are quoting from Jeidels' dissertation, which he published before he joined the Berliner Handels-Gesellschaft. To be sure, Jeidels was, with Paul Wallich, part of the jeunesse dorée of the German financial community, and probably did have insights into the working of Berlin banks which were unknown to the laity. But it is misleading to cite the evidence of a dissertation largely based on published sources as though it is the evidence of an experienced bank director, based on his personal impressions over many years. Neuburger and Stokes also quote Jeidels selectively. Although they cite his remark that turning current account credit into fixed capital cannot "be described as an irregular or abnormal manipulation", they do not refer to his other remarks where Jeidels makes it clear that this is by no means the standard way to raise funds.[25] Current account credits also introduce some interesting biases into the evidence. Neuburger and Stokes suggest that the reason for the poor performance which resulted from the banks' current account lending was because the banks lent too much to heavy

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24. Fremdling and Tilly, "German Banks" p. 418; Neuburger and Stokes, "German Banks: Reply" p. 425.

25. Jeidels Grossbanken und Industrie pp. 17-19, 46, 121.

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industry, and not enough to light industry. Yet Otto Jeidels makes the point that the choice between raising funds through a bank loan or through issuing securities was made according to the type of investment: small additions to a company's activities added year in and year out, a machine here, a machine there, an extension to the factory, the initiation of new lines of production typical of the light engineering industry of the 1890's, such as bicycles, automobiles (then still a branch of light engineering requiring very little capital), typewriters, cash registers, gas motors or turbines would be paid for by borrowing from a bank. But the sudden big investments typical of heavy industry: the sinking of a coal shaft, the construction of a new blast furnace or Bessemer works, an electricity dynamo, would be paid for by issuing securities. In other words, Neuburger and Stokes assume that their analysis of German current account lending shows a negative performance because much of this current account lending went to heavy industry; yet it is in the nature of current account lending, as Jeidels points out, that the figures over-represent light industry vis-à-vis heavy industry.[26]

Another bias which current account figures introduce into the evidence is that companies which are so unsuccessful that they can never be introduced onto the stock exchange will be dependent on current account lending.[27] This can introduce the bias that the companies

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26. Jeidels Grossbanken und Industrie p. 46.

27. Jeidels, Grossbanken und Industrie pp. 123-126.

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in a bank's current account "portfolio" underperform a similar portfolio made up of all the companies on the German stock exchanges. Unfortunately there is no way we can test this theory, since we have no evidence of any bank's current account portfolio. But it is possible that there is an inherent bias in the material used by Neuburger and Stokes which produces their calculation of a negative performance by German universal banks.

I also have misgivings about Neuburger and Stokes exclusion of agricultural output from their calculations, on the ground that German universal banks did not lend to agriculture; many banks, like the Dresdner Bank and the Hallescher Bank-Verein, lent substantially to ancillary industries of agriculture, most notably sugar beet refining, and Kleine has even said of the Hallescher Bank-Verein that its earnings fluctuated in line with the harvest.[28] Finally, by making current account borrowing the centrepiece of industry's fund-raising activity, Neuburger and Stokes (and Tilly) give it an importance which it did not have during much of the nineteenth century. Der Aktionär did say in 1902 that often 20 to 40% of industrialists' working capital was raised by borrowing from banks; but these companies were regarded by conservative financiers as overgeared and unstable.[29] Industry raised its funds from

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28. Jeidels, Grossbanken und Industrie, p. 176; Karl Kleine, Die Entwicklung des Halleschen Bankgewerbes (Jena, 1910) p. 108 (= Sammlung nationalökonomischer und statistischer Abhandlungen des staatswissenschaftlichen Seminars in Halle a. d. S., vol. 62).

29. Jeidels, Grossbanken und Industrie, p. 42.

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numerous sources: the most important source was plowing back earnings, but industry also tapped venture capital from relatives and friends, the stock market, issuing bills of exchange (accommodation paper), even Pfandbriefe (a peculiar type of German mortgage bond), as well as borrowing on current account.

The most recent article concerning this question is by Richard Tilly, and makes use of portfolio theory. Portfolio theory attempts, mathematically, to construct the ideal portfolio which will minimize risk and maximize yield. Tilly first constructs an ideal portfolio for the German economy. He then tries to estimate the current account portfolio of the German universal banks, 1883-1913, and shows that this portfolio was very close to the ideal German portfolio. As I have said above, however, we have no record of any universal bank's current account portfolio, and the assumptions which Tilly makes in constructing the proxy for this portfolio tend to vitiate his analysis. Tilly uses annual reports for new issues introduced on the Berlin stock exchange, 1883-1913, and argues as follows:

> "It is well known that most of these issues were intermediated by the larger Berlin banks. It is also well established that the prospective success of such issues had a fairly close relationship with the current account credits the banks were willing to advance. There are thus grounds for arguing that the sectoral distribution of new issues in the Berlin market not only reflects the pattern of banks' promotional and issue services - and hence the pattern of asset holding they felt their capitalist customers were willing to endorse - but also the broad structure of their most important earning asset, their current account advances. At the very least, the sectoral pattern of overall bank support was bound to resemble the long-run pattern of new issues even though, given the

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> banks' intermediary function of risk-bearing discrepancies at particular points in time were to be expected."[30]

These assumptions are difficult to justify. Tilly remarks further down that private banks were "disproportionately engaged in security dealings", and chief among these activities was underwriting new issues; for the period 1883-1896 all Tilly's statistics may be showing is the skill and subtlety of private banks in selecting the right sectors to introduce to the bourse. From 1897 the Vierteljahrshefte zur Statistik des Deutschen Reichs publish the names and amounts of new issues admitted to quotation on the Berlin Stock Exchange, with the names of the institution or individual who applied for this to the Stock Exchange's Zulassungsstelle. But this still does not give us a full listing of the members of the underwriting consortia; nor are the quotas within the consortia broken out. We have no way of telling how much capital for the Loewe electrical companies came from the Disconto-Gesellschaft, and how much from S. Bleichröder.[31] Secondly, sectoral idiosyncracies mean that banks' current account portfolios probably looked very different from Tilly's construction: the numerous family companies in the iron industry and in the chemical industry (which issued little nominal capital, but paid high dividends and whose shares commanded extremely high prices)

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30. Richard H. Tilly, "German Banking, 1850-1914: Development Assistance for the Strong" in: The Journal of European Economic History (Rome, 1986) vol. 15 No. 1 p. 134.

31. Tilly, "German Banking" p. 147; Jeidels, Grossbanken und Industrie pp. 174-175.

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make that a virtual certainty. In addition, Tilly has probably undercounted the weight of mining in banks' portfolios. This is a serious problem, because the high risk and relatively low yield of mining means it does not appear in his German ideal portfolio. What Tilly does not take into account is that many mines were in the form of a Gewerkschaft. The Gewerkschaft, which only existed in mining and closely related industries (such as the Schalker Verein, which operated blast-furnaces), issued shares with unlimited liability known as Kuxen; 128 Kuxen before 1865, 100, 1000, or a multiple of 1000 Kuxen from 1865. When a mine needed money, especially during the sinking of a shaft, it compelled its Kux-holders (known as Gewerken) to pay up money; these call-ups of funds are known as Zubussen. Once the mine began to make money, it distributed Ausbeuten. The process is summed up in an aphorism from 1714:

> Wer der Ausbeut will geniessen,
> Lass sich Zubuss nicht verdriessen.
> (He who would reap exploitation's treasure,
> Will pay expenses without displeasure.)

If a Gewerke did not pay a Zubusse, he surrendered his rights to his Kux in a process known as Abandon. Kuxen were also, unlike most German shares, in registered form; often certificates were not even issued, the only evidence of ownership being an entry in the books of the Gewerkschaft. Because of their complicated and risky elements, the Kux market was the province of specialists. They tended not to be traded on the Berlin stock exchange, but on the West German bourses of Cologne, Düsseldorf, and Essen, especially the last. By concentrating on the Berlin

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stock exchange, Tilly may have introduced a bias against mining into his material which makes the banks' current account portfolio look better than it actually was.

In addition, as Tilly himself admits, he has no method of distinguishing performance within sectors; Tilly's article provides no way of testing my assertion that the universal banks tended to fund the mediocre companies in specific industries (the Phoenix and the Dortmunder Union in the iron and steel industry, "Neue Hoffnung" at Bleialf, "Bertha Isabella" at Commern, and the Commerner Bergwerks- und Hütten-Actien-Verein in the Eifel lead mining industry) as opposed to the well-managed, but often independent and idiosyncratic companies (Krupp, or in the nonferrous metals industry the Metallgesellschaft and the Mechernicher Bergwerks-Verein). Tilly also does not give many details about how he arrived at his figures; it is by no means clear how he coped with various pit-falls, such as companies which sprawl across more than one sector (e.g. the vertically integrated companies in heavy industry, which could go from coal to engineering) or whether or not he included a major German bank, the Berliner Handels-Gesellschaft, in his calculations. The Berliner Handels-Gesellschaft was one of the most active banks in underwriting securities, but I do not think it can be considered a true universal bank, because it has largely restricted itself to investment banking. If Tilly did include the Berliner Handels-Gesellschaft, he will have a heavier weighting for utilities (the Deutsche Continental-

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Gas-Gesellschaft of Dessau) and street railways (the Lenz concern) than would be justified. Since utilities and transport are in first place and fourth place respectively in his portfolio of German universal banks' current account lending, this could be an important distortion.

An interesting aspect of Tilly's findings is that the four industrial sectors with the heaviest weighting in his portfolio are utilities (21.4%), metals (20.4%), engineering (13.5%), and transport (13.4%).[32] Transport and utilities are capital intensive, not labour intensive. Gas companies employ very few people. (The largest German gas company, the Deutsche Continental-Gas-Gesellschaft of Dessau, employed 821 men in 1880 and 3242 in 1905; only slightly more than one large coal shaft of the Gelsenkirchener Bergwerks-Actien-Gesellschaft, which in 1913 employed 55,494 men.[33]) Tilly's portfolio calls up a vision of masses of unemployed on Wilhelmine street corners. But if anything, from the mid-nineties Germany was in a state of over-employment, sucking in labour from Poland, Croatia, Slovenia, and Italy.

If we strip out Tilly's assumptions and look at his portfolio again, we have a portfolio which for 1883-1896 entirely, and for 1897-1913 largely, reflects not the lending of the universal banks but rather the funds supplied

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32. Tilly, "German Banking", pp. 134-135.

33. Wolfgang von Geldern, Wilhelm Oechelhäuser als Unternehmer, Wirtschaftspolitiker und Sozialpolitiker (Munich, 1971) p. 26 (= Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie, Beiheft 7); Friedrich Artur Freundt Kapital und Arbeit (Berlin, [1929]) p. 87.

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by the stock exchange. Stripped of its assumptions, Tilly's results can be made perfectly compatible with my own conclusions. To restate this: universal banks were not successful in fostering Germany's economic development. They lent readily to poorly managed companies and reluctantly to well managed companies within the same sector. Private bankers and some specialized investment banks, such as the Berliner Handels-Gesellschaft, however, were often extremely skilled at selecting companies to underwrite and introduce to the stock exchange, and the results of their efforts are shown by Tilly's analysis of the portfolio composed of new issues on the stock exchange, which approximates very closely to an ideal portfolio for the German economy.

At the end of his article, Tilly says he wants to end on a positive note, and argues that there were many innovations in industry which the universal banks did finance, such as the shift to deep shaft mining in the Ruhr, the Bessemer process, the formation of vertically integrated coal, iron, and steel enterprises, and the finance provided by the Deutsche Bank and the Berliner Handels-Gesellschaft to the Deutsch-Oesterreichische Mannesmannröhren-Werke in developing a new method of tube manufacture.[34] This brings the discussion back to the approach already suggested by Tilly in his article with Fremdling, namely the study of the relation of individual universal banks to individual industrial companies. The dissertation which follows may be

34. Tilly, "German Banking" p. 149.

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considered an application of this approach.

C. Previous Studies of the Disconto-Gesellschaft.

Nine banks are reckoned among the large Berlin banks (Berliner Grossbanken) of 1913: they are, with their dates of foundation, the Deutsche Bank (1870), the Disconto-Gesellschaft (1851), the Dresdner Bank (1872), the Bank für Handel und Industrie (often called the Darmstädter Bank; 1853), the Schaaffhausen'scher Bankverein (1848), the Berliner Handels-Gesellschaft (1856), the Commerz- und Disconto-Bank (1870), the Nationalbank für Deutschland (1881), and the Mitteldeutsche Credit-Bank (1856). There are a number of reasons why the Disconto-Gesellschaft is the best of these banks to study. The last three banks were much smaller than the rest, and much of the literature (Otto Jeidels, Jacob Riesser) does not even include them in the ranks of the Grossbanken. As I have said before, we cannot consider the Berliner Handels-Gesellschaft to be a true universal bank, since under Carl Fürstenberg it concentrated on investment banking after he became the managing partner in 1883.[35] Similar reasons lead me to exclude the Deutsche Bank: it was founded in 1870 to finance Germany's foreign trade, and its stable and profitable involvement in the acceptance market allowed it to grow quickly and overtake the Disconto-Gesellschaft in terms of turnover as early as 1876. Although the Deutsche Bank did provide some finance to industry in its early years, these tended to be

35. Die Berliner Handels-Gesellschaft in einem Jahrhundert deutscher Wirtschaft 1856-1956 [Berlin, 1956] p. 104.

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exceptional cases: either industries which were oriented towards a foreign trade (such as jute spinning) or involvements which arose in part out of Georg von Siemens' family connections (such as Siemens & Halske and the Deutsch-Oesterreichische Mannesmannröhren-Werke). The most important industrial investment of the Deutsche Bank in this period, its involvement with Emil Rathenau's Allgemeine Electricitäts-Gesellschaft in the years 1887-1897, emerged as an extension of the Siemens & Halske links, since the creation of the A.E.G. took place with the co-operation of Siemens & Halske.[36] Karl Helfferich is thus right in dating the start of the Deutsche Bank's major commitment to industry from 1897: in that year the Deutsche Bank reached out simultaneously to the Ruhr and Upper Silesia by concluding an Interessengemeinschaft (literally "community of interests", an IG is a profits pooling agreement often accompanied by a swap of shares, as in this instance) with the Bergisch Märkische Bank of Elberfeld and the Schlesischer Bank-Verein of Breslau.[37] For most of the nineteenth century the Deutsche Bank was not a true universal bank, but devoted to self-liquidating transactions on the English model. Adolf Weber goes even further, and argues that before 1914 one could describe the Deutsche Bank as a banque de dépôts with as much justice as the Crédit Lyonnais was so termed. Both the Deutsche Bank and

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36. Mosse, Jews in the German Economy, pp. 245-246.

37. Karl Theodor Helfferich, Georg von Siemens. Ein Lebensbild aus Deutschlands grosser Zeit (Berlin, 1923) vol. 2, p. 157.

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the Crédit Lyonnais did engage in securities underwriting, but their chief activities were normal banking and money transfer functions.[38]

So far as the other banks were concerned, neither the Darmstädter Bank nor the Schaaffhausen'scher Bankverein have enough of a reputation for success to be considered model universal banks. The Darmstädter Bank lagged behind its competitors after 1900, and its management was regarded as not particularly competent;[39] only in the nineteen-twenties, after merging with the Nationalbank für Deutschland, would the Darmstädter-Nationalbank under the spectacular leadership of Jacob Goldschmidt conquer a new position of hegemony. The rot ran much deeper at the Schaaffhausen'scher Bankverein. This bank was weakened enough by 1903 that it had to seek support by entering an Interessengemeinschaft with the Dresdner Bank, but this did not work out and was dissolved again in 1908. By the spring of 1914 the Schaaffhausen'scher Bankverein was on the brink of collapse, and was only saved by merging into the Disconto-Gesellschaft. As a result of the merger the Disconto-Gesellschaft wrote down the assets of the Schaaffhausen'scher Bankverein by 80 million marks.[40] One

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38. Weber, Depositenbanken und Spekulationsbanken p. 356.

39. Bernhard, Meister und Dilettanten pp. 227-228.

40. Georg Solmssen, "Einleitung" in: Solmssen, Beiträge vol. 1 pp. XXVIII-XXIX; Alfred Lansburgh, "Die Bank mit 300 Millionen" in: Die Bank. Monatshefte für Finanz- und Bankwesen (Berlin, May 1914) pp. 415-426; Jahrbuch der Berliner Börse 1914/1915. Ein Nachschlagebuch für Bankiers und Kapitalisten (Berlin, Leipzig, Hamburg, 1914) 36th edition, pp. 416-419.

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major bank about which I would like to learn more is the Dresdner Bank, which experienced an extremely rapid growth (only exceeded by the Deutsche Bank) and which seems to have had a successful career as a universal bank, unlike the specialized Deutsche Bank and Berliner Handels-Gesellschaft. Under the management of its director, Eugen Gutmann, the Dresdner Bank owed its growth to some daring speculative coups on the bourse;[41] so it is possible that the Dresdner Bank's success was due more to luck than to the soundness of universal banking. In spite of the Dresdner Bank's success, it did come under great pressure during the crisis of 1901. That crisis hit Saxony particularly hard - the Leipziger Bank and the Dresdner Credit-Anstalt collapsed - and the kingdom's largest bank was not immune.[42]

By contrast with the Schaaffhausen'scher Bankverein and the Bank für Handel und Industrie, the Disconto-Gesellschaft was at least overtly successful: it was always in the top two of universal banks, and occasionally in first place (before 1870 it contested the top spot with the Bank für Handel und Industrie; after that with the Deutsche Bank). As opposed to the four banks founded from 1870, the Disconto-Gesellschaft was founded in 1851 as a co-operative credit union but became a fully fledged universal bank in 1856, which meant that it was around for some of the early, very

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41. Bernhard, Meister und Dilettanten pp. 225-227.

42. Erich Achterberg, Berliner Hochfinanz. Kaiser, Fürsten, Millionäre um 1900 (Frankfurt, 1965) pp. 137-140. Weber, Depositenbanken und Spekulationsbanken p. 7 note 2 and pp. 8-9; Jahrbuch der Berliner Bürse 1914/1915 pp. 405-406.

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crucial stages of German economic development, namely the boom and crisis of 1857. As opposed to the Deutsche Bank and the Berliner Handels-Gesellschaft, the Disconto-Gesellschaft was a true universal bank from 1856, not a specialized commercial or investment bank. I must enter a caveat here: the Disconto-Gesellschaft did not raise many funds from small depositors; as Knut Borchardt has emphasized, for most of the nineteenth century this was the field of savings banks, which were mostly municipally owned.[43] The leader among the big banks in seeking out the deposits of the "little man" was the Deutsche Bank, which opened its first deposit office (Depositenkasse) in Berlin in 1874. A prerequisite for such a policy was to cover Germany with a network of branches, and this concentration process did not get under way until 1895, when the Disconto-Gesellschaft merged with the Norddeutsche Bank of Hamburg.

But although the universal banks did not raise funds in the form of deposits from small savers, they did have funds placed on deposit with them by their client companies - just as their model, the French Crédit Mobilier, used the funds placed on deposit with it by its client railway companies.[44] I now would like to emphasize the regular banking activities of the Disconto-Gesellschaft. This is because I shall

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43. Knut Borchardt, "The Industrial Revolution in Germany 1700-1914" in: Carlo M. Cipolla, ed. The Fontana Economic History of Europe. The Emergence of Industrial Societies, Part One (Glasgow, 1973) pp. 149, 151-152.

44. Johann Plenge, Gründung und Geschichte des Credit Mobilier. Zwei Kapitel aus Anlagebanken, eine Einleitung in die Theorie des Anlagebankgeschäftes (Tübingen, 1903) pp. 96-98.

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devote much of my attention to the "irregular" investment banking activities of the Disconto-Gesellschaft, partly because it is precisely in this area that German joint-stock universal banks are distinguished from English and American banks, and partly because there is more evidence about the spectacular investment banking activities. Since so many of the Disconto-Gesellschaft's investments ended in misfortune, the reader may well echo the cry of Ludwig Bamberger, "What a profitable business must a banker's be, that it allows him to engage in so many bad ventures!"[45]

One important technique which the Disconto-Gesellschaft used to even out earnings between good years and bad years was to carry forward earnings from very good years: in 1873 3,044,020 thalers (one thaler equals three marks) carried forward accounted for 39.64% of the Disconto-Gesellschaft's income for that year, and in 1874 3,569,708 thalers carried forward accounted for 51.15% of income.[46] Another method was the transfer of funds into and out of reserves: the massive amounts the Disconto-Gesellschaft had salted away during the boom years of the 1870's enabled the bank to survive the crisis that followed. These reserve funds make German banks' profit and loss accounts very difficult to interpret; a particular problem are the "hidden reserves" (stille Reserven), or the writing down of assets

45. Ludwig Bamberger, Erinnerungen ed. Paul Nathan (Berlin, 1899) p. 369.

46. Walther Däbritz, Gründung und Anfänge der Disconto-Gesellschaft, Berlin. Ein Beitrag zur Bank- und Wirtschaftsgeschichte Deutschlands in den Jahren 1850 bis 1875 (Munich and Leipzig, 1931) p. 250.

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far below their true value. (Hidden reserves shunted off to Luxembourg subsidiaries make modern German banks' balance sheets very difficult to analyze.) In addition to the biblical technique of setting aside the profits from the fat years to tide one over the lean years, the Disconto-Gesellschaft had more regular sources of income which were less dependent on the bourse: profits from discounting bills of exchange (the bank's original and eponymous purpose), interest income, and fees. Often these three sources would account for three quarters of the bank's income in years when the stock market was sluggish. These statistics for 1856-1874 are reproduced in the work of Walther Däbritz, and I shall copy some years from there:

Earnings of the Discont-Gesellschaft, various years (in Tlr. and %)

	1858		1863		1866		1871	
Carried forward	112,440	11.35%	8,296	0.84%	2,523	0.21%	182,383	3.27%
Bills	323,521	32.66%	251,915	25.55%	345,034	28.26%	555,872	9.96%
Interest	180,471	18.21%	262,539	26.63%	211,516	17.32%	-19,921	-0.35%
Fees	197,108	19.89%	237,314	24.07%	243,425	19.94%	456,872	8.19%
Securities	95,194	9.60%	183,151	18.58%	368.646	30.19%	4,303,367	77.12%
Sundry	82,127[a]	8.29%	42,666[b]	4.33%	49,798[b]	4.08%	101,324[b]	1.81%

NOTES: [a]Includes income from the Disconto-Gesellschaft's ironworks, the Henrichshütte.
[b]Includes profits from property speculation.

SOURCE: Walther Däbritz, Gründung und Anfänge der Disconto-Gesellschaft, Berlin. Ein Beitrag zur Bank- und Wirtschaftsgeschichte Deutschlands in den Jahren 1850 bis 1875 (Munich and Leipzig, 1931) pp. 250-251.

The table above shows that the Disconto-Gesellschaft had

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regular sources of income - bills, interest, and fees - which were often not as profitable, but were far less erratic than income from securities operations. In addition to this, even though the great day of deposit-taking was yet to dawn, the Disconto-Gesellschaft took in a respectable sum in deposits: 773,962 thalers in 1858, 1,559,179 thalers in 1863, 920,396 thalers in 1866 and 4,926,423 thalers in 1871.[47]

It is true that the fully-fledged universal bank, as we know it today, did not exist in Germany before 1914: the banks then did not have extensive branch networks, and had fewer deposits than the savings banks. The Disconto-Gesellschaft, nonetheless, did combine enough elements of regular commercial banking - raising much of its income from bill discounting, interest, and fees, plus having a respectable amount deposited with it - with investment banking activity that I think we can fairly describe it as a universal bank, in a way we cannot describe the Deutsche Bank or the Berliner Handels-Gesellschaft. The Disconto-Gesellschaft also has a reputation as a fairly successful bank - Richard Tilly, for one, regards it as a successful bank[48] - which cannot be said of the Bank für Handel und Industrie or the Schaaffhausen'scher Bankverein. Finally, the Disconto-Gesellschaft is also worthy of special attention because it was founded early: it was formed as a

47. Däbritz, Disconto-Gesellschaft p. 246.

48. Tilly, "German Banking", p.113.

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credit co-operative in 1851, and became a universal bank in 1856. It was thus active during the 1850's and 1860's: crucial decades for the development of German industry. This is an advantage which the study of the Disconto-Gesellschaft has over its later rivals.

The archives of the Deutsche Bank and the Disconto-Gesellschaft are no longer accessible; when I was at the Zentrales Staatsarchiv in Potsdam in May 1982, the archivists there acknowledged that they possessed the archives of the Disconto-Gesellschaft and the Preussische Central-Bodencredit Actien-Gesellschaft, but said that the documents were not yet ready to be seen by scholars. The Historisches Archiv of the Deutsche Bank in Frankfurt am Main, which I have consulted,[49] contains little on the Disconto-Gesellschaft: essentially just a full set of the annual reports, which are useful and difficult to find. What we have lost may be surmised from an anecdote told by the financial journalist Georg Tischert. In the years shortly before the war the archive of the Disconto-Gesellschaft was open to financial journalists who used it to research their articles. Tischert at one point wrote an article about August Thyssen which was so perceptive that even Thyssen asked him "However did you find that out?" Tischert blurted out, "Oh, that information was contained in file so-and-so of the archive of the Disconto-Gesellschaft."

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49. I would like to thank Frau Dr. Hanne Braun of the Institut für bankhistorische Forschung e. V. of Frankfurt/Main and Frau Raab-Rebentisch of the Deutsche Bank for obtaining access for me to the Historiches Archiv of the Deutsche Bank AG.

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The next time Tischert went to the Disconto-Gesellschaft archive, he asked for the same file and was told it was now gesperrt: no longer open to public inspection.[50]

Dr. H. A. Wesel, the archivist of th Mannesmann-Werke, has said that there are about ten major company archives in Germany: Krupp, Siemens, Gelsenkirchen, Mannesmann, Phoenix, to name the most prominent. For the Disconto-Gesellschaft's relations with Krupp I have been able to draw upon the oldest and in some ways the best company archive in Germany at Fried. Krupp GmbH in Essen; for the history of the Gelsenkirchener Bergwerks-Actien-Gesellschaft I have used the archives of that company which have found their way to the Bergbau-Archiv beim Deutschen Bergbaumuseum in Bochum. The archives of the Hoesch Werke, to which I was kindly granted admittance, contain little about the Dortmunder Union - chiefly annual reports - but I have found useful information about the Union in archives of competitors, such as Krupp and the Phoenix. Other useful material is in the Rautenstrauch papers in the Rheinisch-Westfälisches Wirtschaftsarchiv, the Prussian Ministry of Trade papers which are now at Merseburg, and material about the Braunschweig-Hannoversche Hypothekenbank and the privatization of the Brunswick State Railways at the Niedersächsisches Staatsarchiv in Wolfenbüttel. I found many useful references in the Bleichröder Archive at the Baker Library of the Harvard Business School.

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50. Georg Tischert, Männer und Werke. Altes und Neues aus Industrie, Bank- und Börsenwelt (Berlin, [1930]) pp. 217-218.

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Industry journals - most notably the Zeitschrift für das Berg- Hütten- und Salinen-Wesen - and the contemporary press have supplied interesting material. A particular stroke of good fortune was finding a set (through 1872) of Der Aktionär, the leading German stock market weekly, in the British Library; later years were consulted at the Stadt- und Universitätsbibliothek in Frankfurt am Main.

I must discuss one primary source at some length: the works of the anti-Semitic muckraker Otto Glagau. Glagau began as a book reviewer on the National Liberal National-Zeitung, and published books on Turgenev and the Baltic countries. During the boom of the 1870's he put his money into a fraudulent property company and lost all his savings. In retaliation he wrote a series of articles about the company promoting scandals, blaming them on the Jews and the liberals, later expanded and re-issued in two volumes about the Börsen- und Gründungs-Schwindel. These volumes are indispensable for any study of German business in the 1870's: they contain the dates when companies were founded, their initial capitalizations and the percentage paid up, the names of the promoters, what dividends were paid (if any), and the line of business which the companies claimed to be in. Glagau's virulent anti-Semitism leads one to treat what he says with caution; but I always check Glagau against reliable sources (such as Der Aktionär or the stock market yearbook Saling's Börsen-Papiere) when I can, and I have always found him very accurate in reporting names, figures, and dates. It is his interpretations that are flawed: he

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believes that 90% of the Gründer (promoters) were Jews, and cannot distinguish fraud from failure. Glagau can also be selective in the facts he reports. For example, he writes that the Provinzial-Disconto-Gesellschaft had branches at "Duisburg, Ludwigshafen, Bernburg, Hamelin and similar large seaports and commercial centres"[51] which implies that the Provinzial-Disconto-Gesellschaft only had offices in provincial nests like Hamelin. Glagau omits to mention the branches or affiliates of the Provinzial-Disconto-Gesellschaft in Hamburg, Aachen, Elberfeld and Halle. This is characteristic: Glagau tells the truth, but not the whole truth. After this Glagau pursued a career as a publicist and a leading intellectual influence in the anti-Semitic movement, impressing among others the young Helmut von Gerlach. Gerlach has described the journal Glagau wrote, Der Kulturkämpfer, as a review which in its literary brilliance pre-figured Harden's Zukunft. Yet Glagau did not always remain innocent of the seamier side of stock market speculation: in October 1881 Der Aktionär announced as a very extraordinary piece of news ("eine ganz extraordinäre Neuigkeit") that Glagau had joined the supervisory board of the Provinzial-Tramway-Kompagnie. This dubious enterprise was backed by the Vereinsbank of the sleazy August Sternberg, who at one point was arrested for offences against section 176 of the German penal code (sex with minors). The Vereinsbank collapsed in the eighteen-nineties;

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51. Otto Glagau, Der Börsen- und Gründungs-Schwindel in Deutschland (Zweiter Theil von "Der Börsen- und Gründungs-Schwindel in Berlin") (Leipzig, 1877) pp. 528-529.

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Glagau himself died in 1892.[52]

To pass from primary sources to works on the Disconto-Gesellschaft, there are two excellent books which were published at the bank's behest: Die Disconto-Gesellschaft 1851 bis 1901. Denkschrift zum 50jährigen Jubiläum, published in 1901 (these anniversary histories are known as Festschriften; I shall henceforth refer to this one as the Disconto-Festschrift) and the history of the Disconto-Gesellschaft by Walther Däbritz, published in 1931. But excellent though these histories are, they do not go much beyond the annual reports of the Disconto-Gesellschaft. For example, because it was never mentioned in the annual reports, the Disconto-Gesellschaft's participation in founding the Crédit Industriel et Commercial of Paris has found its way into histories of French banking but not into German histories. Similarly, the Disconto-Gesellschaft's ownership of the lead mine "Bertha Isabella", although mentioned in a history of the Eifel lead mining industry, has never found its way into histories of the Disconto-Gesellschaft.[53]

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52. Maximilian Müller-Jabusch, So waren die Gründerjahre (Düsseldorf, 1957) p. 10; Helmut von Gerlach, Von Rechts nach Links ed. Emil Ludwig (Zurich, 1937) pp. 110-111; "Berliner Börse (22 bis 28 Oktober)" in: Der Aktionär. Central-Organ für den Mobiliar-Besitz (Frankfurt/Main, Sunday, 30 October 1881) Jahrgang 28, No. 1453, p. 740.

53. Rondo E. Cameron, France and the Economic Development of Europe 1800-1914. Conquests of Peace and Seeds of War (Princeton, 1961) p. 172; Bertrand Gille, "La Formation de la Société Générale" in: La Banque en France au XIX^e Siècle. Recherches Historiques (Geneva, 1970) pp. 158, 162; L. Schmitz and H. Zander, Die Bleibergwerke bei Mechernich und Commern. Nach handschriftlichen und gedruckten Quellen (Mechernich and Commern, 1882) pp. 4 and 56.

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A special place is occupied by Otto Lindenberg's 50 Jahre Geschichte einer Spekulationsbank: Ein Beitrag zur Kritik des deutschen Bankwesens (1903). Lindenberg published his book as an Anti-Festschrift against the Disconto-Festschrift and the arguments of Adolf Weber. I agree with much of Lindenberg's criticism of universal banks; but his tone is extremely virulent, and he often fails to distinguish failure from fraud. Lindenberg sees no difference between the fraudulent conduct of the Leipziger Bank and the Kasseler Gesellschaft für Trebertrocknung and the wretched failure of the Disconto-Gesellschaft and the Dortmunder Union. Lindenberg gives an uncritical hearing to attacks on the Disconto-Gesellschaft: he accepts in its entirety Strousberg's account of the Dortmunder Union and the Roumanian railways. His book is sometimes an advance upon Däbritz and the Disconto-Festschrift in that he has made use of annual reports other than those of the Disconto-Gesellschaft, but his refusal to distinguish failure from fraud flaws his conclusions.

These histories of the Disconto-Gesellschaft are supplemented by a number of important biographies. Alexander Bergengruen's biography of David Hansemann and Hermann Münch's biography of Adolf von Hansemann are vital. Georg Solmssen has left a valuable set of essays, Max von Schinckel an autobiography. There are also worthwhile biographies of Franz Urbig, Otto Wehrmann, Emil Kirdorf, and Gustav Freytag's classic work about Carl Mathy. Hans Herzfeld was not allowed to make use of the Disconto-

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Gesellschaft archives for his biography of Johannes von Miquel, and although his account does include some new material, it is distorted by his acceptance of Glagau's assertions about what enterprises the Disconto-Gesellschaft invested in. Glagau assumed that whenever Miquel spoke in favour of an enterprise in the Reichstag or the Prussian Diet, he was speaking on behalf of the Disconto-Gesellschaft: so Glagau and Herzfeld assume that the Disconto-Gesellschaft was an investor in the Deutsche Eisenbahnbau-Gesellschaft, because Miquel spoke in the Prussian Diet in favour of subsidizing its construction of the Berliner Stadtbahn. Yet there is no evidence of any Disconto-Gesellschaft involvement with the Deutsche Eisenbahnbau-Gesellschaft.[54]

Judging by Georg Tischert's anecdote, the inaccessibility of the archive of the Deutsche Bank und Disconto-Gesellschaft has deprived us of much useful material. On the other hand, the opening of industrial archives - many inaccessible to scholars before the nineteen-sixties - combined with the use of a whole gamut of other sources, such as the press, financial yearbooks, company histories, family histories, biographies, dissertations, enable us not merely to go beyond the Disconto-Festschrift and Däbritz, but to shed new light on

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54. Stenographische Berichte des Hauses der Abgeordneten (SBHA) 12th Legislative Period, 1st Session, vol. 1, 12 January 1874, pp. 506-515; Otto Glagau, Der Börsen- und Gründungs-Schwindel in Berlin. Gesammelte und stark vermehrte Artikel der "Gartenlaube" (Leipzig, 1876) pp. 207-211; Hans Herzfeld, Johannes von Miquel. Sein Anteil am Ausbau des Deutschen Reichs bis zur Jahrhundertwende (Detmold, 1938) vol. 1, pp. 369-370.

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the relationship between German banks and their industrial clients.

D. Other Ventures of the Disconto-Gesellschaft

A recent writer on British economic history has commented

> Libraries and record offices abound with the records of the untypical: the large, progressive, successful enterprise on the one hand, the bankrupt failure on the other. The ordinary, run-of-the-mill concern is rarely to be found.[55]

If this holds true for British economic history, it is even more valid for Germany, where far fewer archives have been preserved. The situation is still worse because very few records of the German bankrupt failures have been preserved: to my knowledge, there are no records about the Vereinsbank Quistorp (collapsed 1873), the Vereinsbank Sternberg (collapsed in the 1890's), the Leipziger Bank (1901), or the Darmstädter-Nationalbank (1931). One hopes that as the study of German economic history advances, the archives of law courts, notaries and families will be tapped to throw more light on the bankrupt failures. Until then, any study primarily based on archival sources will have an inherent bias towards the successful companies which survived and could afford to retain their archives: Siemens, Krupp, Gelsenkirchen, Mannesmann and Phoenix. Although I have studied the other ventures of the Disconto-Gesellschaft, for reasons of space I must concentrate on those companies for which there is an archival record. To

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55. John Benson, The Penny Capitalists. A Study of Nineteenth-century Working-class Entrepreneurs (Dublin, 1983) p. 2.

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show, however, that I am not concealing some brilliant investments of the Disconto-Gesellschaft which more than outweigh failures like the Dortmunder Union, I shall now list, in summary form, the other ventures.

Industrial, Financial and Transport Ventures of the Disconto-Gesellschaft.

Formed	Dissolved	Company	Nominal Share Capital (million marks)	Remarks
1852	1929/1930	Phoenix, AG für Bergbau und Hüttenbetrieb	18 (1860)	Largest integrated iron and steel firm in Germany in 1850's; Disconto involvement from 1857 culminating in drastic reorganisation, 1860; moderate success thereafter.
1856	1900	"Neue Hoffnung" near Bleialf	6-7[a]	Eifel lead mine owned outright by Disconto; shut down 1886 due to fall in lead prices.
1857	ca.1880	"Bertha Isabella" near Commern	3[a]	Eifel lead mind concession owned outright by Disconto; never produced any lead.
1864	ca.1870	Erste Preussische Hypotheken-Actien-Gesellschaft	3[b]	Mortgage bank; due to legal restrictions and a tight money market ran into difficulties and entered effective liquidation in 1867; its functions were subsumed by the Preussische Central-Boden-credit-AG in 1870.
1864	1918	Bochumer Bergwerks-Actien-Beselischaft	2.7	Operated the colliery "Ver. Präsident"; very successful in mid-1870's, but due to constant flooding only paid dividends twice after 1877, in 1880 and 1889.
1866	1946?	Hallescher Bank-Verein	4.5 (1873)	Very successful small regional bank with co-operative elements; but Disconto only involved

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				from 1873 until 1876.
1870		Preussische Central-Bodencredit-AG	36[c]	Germany's largest mortgage bank; very successful; still exists today as Deutsche Central-Bodencredit-AG.
1870		St Gotthard Railway	127.5	Although ultimately successful, much of this capital was wiped off by a drastic reorganization in the mid-1870's.
1870	1882	Brunswick Railway Company	36	Hit badly by depression after 1873; no dividends 1873-74; highest dividend after that $2^1/_2$%.
1871	1880	Provinzial-Disconto Gesellschaft	30[d]	Founded to provide the Disconto with a provincial branch network; performed well in 1872, but badly in 1873; entered liquidation, paying back 53% of the 60% paid in.
1871	1914	Bergisch Märkische Bank	13.5[e]	Very successful provincial bank, but Disconto connection dissolved in 1876; entered IG with Deutsche Bank, 1897, full merger into Deutsche Bank, 1914.
1872	1917	Aachener Disconto-Gesellschaft	6[b]	One of the most successful provincial banks; Disconto involvement continued to ca. 1914 but the Aachen bank then merged into Dresdner Bank in 1917.
1872	1920	Bensberg-Gladbacher Bergwerks- und Hütten-Actien-Gesellschaft "Berzelius"	4.2	Lead and zinc mine and smelter; successful until ca. 1900, but then ceased paying dividends; absorbed and successfully reorganized by the Metallgesellschaft of Frankfurt/Main.
1872	1900	Commerner Bergwerks-	4.5	Eifel lead mine and smelter; ceased

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		und Hütten-Actien-Verein		operating in 1883 due to fall in lead prices.
1873	1879	Harzer Union	6	Iron ore mine and smelter; entered bankruptcy, 1879.
1873	1896	Mengeder Bergwerks-Actien-Gesellschaft	6	Owned the coal concession "Adolph von Hansemann"; repeated flooding and other accidents meant it only began raising coal in 1896.
1872	1885	Deutsch-Belgische La Plata Bank	30[b]	The Uruguayan financial crisis of 1875 immobilized the bank's funds and forced it into liquidation, which was finally concluded at a profit in 1885.
1882	ca.1920	Kaliwerke Aschersleben		Although the first shaft flooded, under Hermann Schmidtmann this became one of the most successful German potash mines.
1887	1930	Brasilianische Bank für Deutschland	10	This became one of the most successful German overseas banks.
1889		Deutsch-Asiatische Bank	5[c]	In spite of initial reluctance by the banks to found this, this bank turned out to be a successful operation.
1887	after 1920	Great Venezuela Railway	26.4	Construction difficulties led to huge cost overruns, and these financial problems plus conflict with the Venezuelan government forced the merger of the Disconto and the Norddeutsche Bank so they could write it off.

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1890	?	Internationale Druckluft- und Electricitäts-Gesellschaft		Formed to exploit the compressed air technology of Victor Popp; the failure of the technology led to a severe reorganization and the Disconto-Norddeutsche merger.
1892	1904	Union Electricitäts-Gesellschaft		Formed out of the electrical interests of the Loewe concern and the American Thomson Houston company; in spite of some success, always remained an also-ran after Siemens and A.E.G.; merged into A.E.G. in 1904.
1895	1917?	Bank für Chile und Deutschland	10[g]	A successful overseas bank.

NOTES: [a]These figures are not share capital, but the amount the Disconto-Gesellschaft invested in these lead mines.
[b]40% paid in.
[c]40% paid in; further calls of 10% apiece were paid up in the years 1889, 1892, 1895, 1897, 1902 and 1903.
[d]40% paid up initially, another 20% was called up in 1872.
[e]40% paid up initially, another 20% was called up in July 1872.
[f]Millions of Chinese silver taels, not marks.
[g]25% paid in.

This list cannot hope to be exhaustive, but I think it is comprehensive enough to give an accurate picture of the Disconto-Gesellschaft's investments. I have left out some investments which I only know of from one occasional reference, such as newspapers (Die Post and the National-Zeitung)[59] and Wertheim's department store.[60]

Although there are some successful banks in the list above, my argument is that the Disconto-Gesellschaft was

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59. Stern, Gold and Iron. p. 276.

60. Stenographische Berichte des Reichstags (henceforth SBRT) XII leg. Per. I. Session 264 Sitzung (18 June 1909) vol. 237, p. 8665.

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poor at selecting industrial companies to lend to, and this is brought out strikingly by failures like the Harzer Union and the Mengeder Bergwerks-AG. For reasons of space I must concentrate on companies where archival records are better preserved; but it is important to bear in mind that the Dortmunder Union was not an exceptional case. It was a typical example of the underwritings of the Disconto-Gesellschaft. It was the Gelsenkirchener Bergwerks-Actien-Gesellschaft, the Disconto-Gesellschaft's most outstanding industrial success, which was exceptional.

E. Heavy Industry and the Crash of 1873.

I will now discuss two more emphases of my work: first of all, I will concentrate on interconnected enterprises of heavy industry (coal, iron and steel, railways), and secondly, the crash of 1873 will often take centre stage in my account.

This concentration on heavy industry does introduce a bias in that Eduard Wagon has argued that the iron industry paid very low dividends, only 5-6%;[61] and thus by concentrating on heavy industry I am paying most attention to one of the least profitable sectors of German industry. But I think this emphasis is justified, even though the role of heavy industry in the German economy is

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61. Dr. Oskar Stillich, Eisen-und Stahl-Industrie (Berlin, 1904) p. 43 (=Nationalökonomische Forschungen auf dem Gebiete der grossindustriellen Unternehmung, vol. 1). Eduard Wagon, Die Finanzielle Entwicklung deutscher Aktiengesellschaften von 1870-1900 und die Gesellschaften mit beschränkter Haftung im Jahre 1900 (Jena, 1903) pp. 25-39, 166, 169. (=Joh. Conrad ed. Sammlung nationalökonomischer und statistischer Abhandlungen des staatswissenschafflichen Seminars zu Halle a.d.S. Vol. 39).

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probably overemphasized, because this bias towards heavy industry was inherent in the Disconto-Gesellschaft's own investment programme. Unlike the Deutsche Bank and the Berliner Handels-Gesellschaft, the Disconto-Gesellschaft only realized the potential of the electrical industry at a late stage, and the Disconto-Gesellschaft was only involved in chemicals through the potash industry (Aschersleben, the Deutsche Solvay-Werke of Bernburg) as opposed to private bankers, who early recognized the potential of chemicals: examples are W.H. Ladenburg & Söhne which financed the Badische Anilin- und Soda-Fabrik of Mannheim and Georg Hauck & Sohn which financed the Hoechster Farbwerke vormals Meister, Lucius & Brüning.[62] The light engineering industry, one of the most important German industrial sectors, received very little finance from the universal banks before 1914, because it did not require much capital: the nominal share capital of the Daimler-Motoren-Gesellschaft of Stuttgart-Untertürkheim (now Germany's largest industrial company) was only eight million marks as late as 1913.[63] Although my study is biased towards heavy industry, I would argue that this does not misrepresent the ventures of the Disconto-Gesellschaft because the Disconto-Gesellschaft's investments were already biased towards coal,

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62. Rudolf Haas, Die Entwicklung des Bankwesens im deutschen Oberrheingebiet. Zur 100 Wiederkehr des Gründungstags der Rheinischen Creditbank Mannheim am 15. Juni 1970. (Mannheim, [1970]) pp. 27-29. Erich Achterberg, Frankfurter Bankherren (Frankfurt ²1971) pp. 82-83.

63. Jeidels, Grossbanken und Industrie pp. 199-201, Jahrbuch der Berliner Börse 1914/1915.

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iron and steel, and railways.

There is another bias in my study: most of the enterprises I will discuss were founded during the Gründerjahre, the years which immediately preceded the crash of 1873. The Dortmunder Union was founded in 1872, the Gelsenkirchener Bergwerks-Actien-Gesellschaft in 1873. The Disconto-Gesellschaft's most important intervention in the history of Krupp, the loan of 1874, occurred in the same period. This emphasis has the disadvantage that it may make the Disconto-Gesellschaft's ventures appear worse than they actually were, because I will devote much space to the fate of the Disconto-Gesellschaft's ventures in the severe depression 1873-1879. But trawling the early eighteen-seventies does not necessarily give us a worse selection than average of the Disconto-Gesellschaft's industrial ventures. Of the Disconto-Gesellschaft's industrial promotions of those years, we can only describe two as good (Gelsenkirchen, the Krupp loan) and one as mediocre (Berzelius). Yet there were numerous solid enterprises founded during the Gründerjahre (and the picture looks even better if we exclude the numerous fly-by-night banks of those years), many of which still exist today: all three of the major German banks - Deutsche Bank (1870), Dresdner Bank (1872), and Commerzbank (1870) - were founded during those years; so was Continental, the German rubber and tyre manufacturer; so were the Eisen- und Stahlwerk Hoesch, the Duisburger Maschinenbau-AG (now Demag), the Bergwerksgesellschaft Dahlbusch, the Hibernia und Shamrock

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Bergwerksgesellschaft; and a glance at the bottles of some of the most successful brewers (Dortmunder Union-Brauerei, Dortmunder Actien-Brauerei) will also light upon dates from the early eighteen-seventies. The Gründerjahre were no barrier in themselves to the formation of solid and lasting enterprises; although many of these companies suffered severely during 1873-1879, they survived and prospered in subsequent years. Even though the Gründerjahre were an unusual period, the Disconto-Gesellschaft was still remarkably unlucky. A concentration on the enterprises of the 1870's does not place the Disconto-Gesellschaft in an unusually bad light; if it means I can expatiate at length about the Dortmunder Union, I shall still be foregoing such disasters of the 1890's as the Great Venezuela Railway, Popp's Internationale Druckluft- und Electricitäts-Gesellschaft, and the financially unfortunate dynamiting of the iron gates in Hungary by the firm G. Luther.[64]

Since the Crash of 1873 will be the hinge in many accounts of the individual enterprises, I shall say more about it here. The Gründerjahre are the traditional expression for the years which immediately preceded the crash of 1873, the Gründerkrach. They are called the Gründerjahre partly because they occurred at the same time as the foundation (Gründung) of the German Empire, partly because the law of 11 June 1870 allowed public limited companies (Aktiengesellschaften) to be freely founded throughout the German empire and resulted in a huge number

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64. Riesser, Deutsche Grossbanken pp. 392-393.

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of companies adopting the Aktiengesellschaft form. A third reason why they were called the Gründerjahre may be due to a legal evasion developed by Dr. Bethel Henry Strousberg and the legal wizard Justizrath (judicial counsellor; an honorific title like Commerzienrath, commercial counsellor, conceded by the Prussian state to men who had done well in their profession) August Theodor Geppert I. Prussian law in the 1860's forbade the issue of shares below par value; but Geppert and Strousberg could not sell shares in shaky railway enterprises at that high a price. So they devised the fictitious sale of all the shares to the founders, the Gründer, of the railway company, who would then sell the shares on at prices below par as if they were deals in the secondary market.[65]

In addition to the actual Gründerjahre, the boom of the 1850's which culminated in the crash of 1857 has been called the first Gründerjahre retroactively - it was not called so by contemporaries. Austria-Hungary was if anything even more profoundly affected by the boom and crash of 1873 - the crash is often cited as a condemnation of all laissez-faire capitalism by writers about Vienna[66] - and so the boom period of 1904-1912 in the dual monarchy has been referred

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65. Bethel Henry Strousberg, Dr. Strousberg und sein Wirken (Berlin ³1876) pp. 129-131.

66. An example is "Viennese Culture" in: The Economist (London, 15 June 1985) vol. 295, No. 7398, which also has some remarkably kind words for Karl Lueger.

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to as the "second Gründerjahre".[67] There is much to be said in favour of calling the 1850's the "first Gründerjahre," partly because very few of the companies founded in the 1870's were genuinely new enterprises, but often went back to older enterprises founded in the 1850's. Of the companies founded by the Disconto-Gesellschaft during the Gründerjahre, all of them except the Provinzial-Disconto-Gesellschaft and the Deutsch-Belgische La Plata Bank were enterprises which had existed earlier, often in the form of the Kommanditgesellschaft auf Aktien, a peculiar extralegal cross between a partnership and a joint-stock company which I will discuss in detail below (see pp. 151-162).

Of the companies I will discuss, the Henrichshütte, the forerunner of the Dortmunder Union, may be traced back to 1853/54; Krupp was traditionally founded in 1812; the immediate forerunner of the Gelsenkirchener Bergwerks-Actien-Gesellschaft, the Société des Charbonnages de Gelsenkirchen Detillieux et Cie., was founded in 1854. In the case of many mining companies, we can say they were founded in stages, as was the case with Gelsenkirchen: the initial claims were lodged in the late 1840's and then lay dormant during the political upheaval of 1848, the sinking commenced in the mid-1850's, usually under a Kommanditgesellschaft auf Aktien, and finally the mines were converted into an Aktiengesellschaft in the 1870's. The important point is that most of the new companies

67. Eduard März, Austrian Banking and Financial Policy. Creditanstalt at a Turning Point, 1913-1923 (London, 1984) p. 3.

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established during the Gründerjahre of the 1870's were not totally new establishments, but in many cases merely conversions (Umgründungen) into the form of the limited company. I nevertheless prefer to confine the expression Gründerjahre to the period 1867-1873, partly because the term "first Gründerjahre" is not a contemporary useage, partly because although it is true that many industrial companies of the Ruhr trace their origin back to the 1850's (Phoenix, Harpen, Bochumer Verein, Hoerder Verein), their beginnings can often be traced even further back, usually to the late 1840's, sometimes back to the very beginning of deep mining in the Ruhr around 1838. In the case of the three iron companies I have just mentioned, each of them had a predecessor company, usually operated as a partnership (Bochumer Verein: Mayer & Kühne) or a sole proprietorship (Hoerder Verein: Hermann Piepenstock), or in the case of the Phoenix, a peculiar French corporate form, the Société en nom collectif, which can be traced back into the 1840's.[68] Implicit in the useage "first Gründerjahre" is the idea that many German companies were not founded in the 1870's. But if we look closely at the companies of the 1850's, we find we can actually trace them back even further, into the

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68. Festschrift zur Hundertjahrefeier der Dortmund-Hörder Hüttenunion Aktiengesellschaft 1852-1952 (Dortmund, 1952); Walther Däbritz, Bochumer Verein für Bergbau und Gusstahlfabrikation in Bochum. Neun Jahrzehnte seiner Geschichte im Rahmen der Wirtschaft des Ruhrbezirks (Düsseldorf, 1934) p. 61; Geschichtliche Entwicklung und gegenwärtiger Stand des Phoenix, Aktien-Gesellschaft für Bergbau und Hüttenbetrieb in Hoerde. Denkschrift zum 60 jährigen Bestehen des Unternehmens im Jahre 1912 (Hoerde, 1912) p. 12; 75 Jahre Eisenwerkgesellschaft Maximilianshütte 1853-1928 (Rosenberg/Oberpfalz, 1928) pp. 22, 29.

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previous decade: what was different in the 1850's was that the Bochumer Verein, Hoerder Verein, Phoenix and Harpen adopted the joint-stock form, were traded on the stock exchange, began issuing annual reports, and thus emerged into the full glare of history. I shall confine my useage of Gründerjahre to the period 1867-1873.

I now want to explain the boom years of 1867-1873 and the bust which followed 1873. I will begin by setting aside two explanations: the view, put forward by Otto Glagau among others, that it was the German public limited company law of 11 June 1870 which opened the floodgates and unleashed the boom;[69] and the view that the boom was prompted by the French indemnity of five thousand million francs.[70] My view is that the boom and bust of the period 1867-1873 was because of the final frenzy of building of the German mainline railway network, a frenzy which also happened in countries which were at a comparable stage of development, such as the United States and Austria-Hungary.

Liberal critics of Glagau's accusations asserted that it was not the move from a concession system to a system of allowing all public limited companies to be founded which met certain pre-set legal norms (Normativbestimmungen) which led to the boom and bust because railway companies, which

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69. Glagau, Börsenschwindel in Deutschland pp. 2-3; Erhard Hübener, Die deutsche Wirtschaftskrisis von 1873 (Berlin, 1905) pp. 105-114 (= Emil Ebering, ed. Rechts- und Staatswissenschaftliche Studien, Heft 30).

70. Ibid; Max Wirth, Geschichte der Handelskrisen (Frankfurt/Main, ⁴1890) pp. 456-457, Hübener, Wirtschaftskrisis von 1873 pp. 116-120, 122-123.

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committed some of the worse excesses, remained subject to concession and Austria-Hungary, which was as badly if not worse hit than Germany by the boom and bust, continued to operate a concession system. To this Glagau replied that Austria-Hungary's concession system was virtually equivalent to a free-for-all because the bureaucracy was totally corrupt and always ready to accept Banhans pourboires (Banhansche Trinkgelder; Banhans was the Austrian Minister of public works).[71] I find the observations of the liberal critics more credible than Glagau's Parthian shot about Banhans and the Chevalier d'Ofenheim, the great Austrian railway contractor (builder of the Lemberg-Czernowitz-Jassy railway).

In addition to this, it is important to remember that the public limited company form could be established throughout many states of Germany without a government concession before 1870; by then, Prussia, Bavaria, and Hesse-Darmstadt were the only major exceptions. The public limited company (Aktiengesellschaft) and the Kommanditgesellschaft auf Aktien did not require concessions in

Baden under the law of 6 August 1862
Alsace-Lorraine (then part of France) under the French law of 23 May 1863
Lübeck under the law of 2 November 1863
Oldenburg under the law of 18 April 1864
Bremen under the law of 6 June 1864
Württemberg under the law of 13 August 1865
Hamburg under the law of 22 December 1865
Saxony under the law of 15 June 1868

71. Glagau, Börsenschwindel in Deutschland, p. 11.

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The Kommanditgesellschaft auf Aktien did not require a concession in

> Prussia under the laws of 24 June 1861 and 24 August 1867
> Waldeck under the law of 11 February 1862
> Anhalt-Dessau under the law of 1 September 1863
> Lauenburg under the law of 21 October 1868[72]

In other words, there were two methods available to escape the legal requirement of a concession to establish a limited company. One was to exploit the legal loophole of the Kommanditgesellschaft auf Aktien, a sort of partnership with shares, which was virtually identical to an Aktiengesellschaft (the one major exception being that it had to have at least one active partner with unlimited liability; I shall discuss the KGaA in more detail below, see pp. 151-162). The other solution was to go "offshore", to one of the numerous German states outside Prussia which did not require a concession to establish an Aktiengesellschaft, to Hamburg or Bremen, Lübeck or Baden or Württemberg, or even to Paris and London. In practice, this occurred very rarely in the case of industrial public limited companies, because already by the 1850's concessions for them were virtually automatic in Prussia. The Prussian Ministry of Trade files which I have seen show very little activity on the part of the otherwise assiduous Prussian bureaucracy: seven pages of correspondence were sufficient to dispose of the concession of the Bochumer Bergwerks-Actien-Gesellschaft in 1864, a dozen pages enough

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72. Stenographische des Norddeutschen Reichstages I leg. Per. Session 1870 vol. 4 Anlage No. 158 pp. 649-650.

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for the Henrichshütte in 1869.[73] The main bulk of the files (aside from this correspondence), is taken up with the statutes (articles of association) of the various companies, which by 1856 already fall into a standard pattern, although there are stylistic variations depending on the notary.

If the concession of industrial public limited companies was a formality, the concession of banks was almost never granted. With the exception of the Schaaffhausen'scher Bankverein in 1848, the Bank des Berliner Kassen-Vereins in 1850, the Deutsche Bank in 1870 and some small local note-issuing banks in Cologne, Dortmund and elsewhere, the Prussian government granted no concessions for banks to use the public limited company form.[74] Banks founded before 1870 either took the form of the Kommanditgesellschaft auf Aktien or went offshore. Among the banks in Prussia which took the Kommanditgesellschaft auf Aktien form we may mention the very first KGaA, the Disconto-Gesellschaft itself, the Berliner Handels-Gesellschaft, the Schlesischer

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73. "Akten betreffend die Bochumer Bergwerks-Actien-Gesellschaft" in: ZStA Merseburg Rep. 120, Ministerium für Handel, Gewerbe, und öffentliche Arbeiten A XII 7 Nr. 150; "Akten betreffend die Actien-Gesellschaft Henrichshütte bei Hattingen"; ZStA Merseburg, Rep. 120 MfH GüöA, A XII 7 Nr. 106.

74. See Helmut Böhme, "Gründung und Anfänge des Schaaffhausen'schen Bankvereins, der Bank des Berliner Kassenvereins, der Direktion der Disconto-Gesellschaft und der Bank für Handel und Industrie. Ein Beitrag zur preussischen Bankpolitik von 1848-1853" in: Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie (Munich 1965-1966) vol. 10 pp. 189-212 and vol. 11 pp. 34-56; Statutes of the Dortmunder Privat-Aktienbank, Danziger Privat-Aktienbank, and the Hagener Privat-Aktienbank, Gesetz-Sammlung für den Preussischen Staat, 1857, pp. 193-216, 241-264, 705-724.

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Bank-Verein, the Hallescher Bank-Verein, and the Barmer Bank-Verein. The great period for the founding of offshore banks was the 1850's, and the most fruitful area for these banks was not the liberal environment of the Hanseatic cities - although they made their own contributions, such as the Bremer Bank, the Norddeutsche Bank and the Vereinsbank in Hamburg, and the Commerzbank in Lübeck - but rather the paternalistic duodecimal principalities, whose fear of being left to vegetate as economic backwaters was greater than their hostility to financial innovation. The two forerunners of this process were the Anhalt-Dessauische Landesbank in Dessau (founded in 1847) and the Bank für Handel und Industrie in Darmstadt (founded in 1853), and the peak of the boom in 1856 saw numerous imitators: the Mitteldeutsche Creditbank in Meiningen, the Niedersächsische Bank in Bückeburg, the Coburg-Gothaische Creditgesellschaft in Coburg, the Bank für Süddeutschland in Darmstadt (a note-issuing affiliate of the Bank für Handel und Industrie), and, in 1853, the Braunschweigische Bank.[75]

Richard Tilly has suggested that the constant increase in [redacted] requests for concessions of public limited companies made the pressure of work unbearable for the Prussian bureaucracy and virtually compelled the replacement of a concession system with pre-set legal norms.[76] This is a possible explanation, but other motives were also at work. The legal philosophy of the time was already moving from

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75. Riesser, Deutsche Grossbanken p. 4 note 2 and p. 647.

76. Tilly, "German Banking" p. 123-124.

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concession systems for public limited companies to pre-set norms (Normativbestimmungen), and France and England had already done so, as had nearly a third of the German states. As early as the promulgation of the uniform German commercial code in 1860, the Hanseatic cities had tried to write into the code just such an innovatiom, but Prussia had resisted, and the German confederation compromised by allowing this policy to be decided by the individual states. The development which struck the biggest breach in the resistance of the Prussian bureaucracy was, in my opinion, the defection of Saxony by the law of 15 June 1868. The most densely industrialized state in Germany, Prussia's nearest and most formidable German economic rival introduced free formation of public limited companies. This made it only a matter of time before Prussia had to follow. This also explains why the public limited company law went through the Reichstag so quickly, with only four days debate: the debate had been more than thrashed out during the 1860's.[77]

Another reason to change the law was because the two easy avenues open for evasion - the Kommanditgesellschaft auf Aktien and moving "offshore" - were making the concession system into a dead letter, to say nothing of the perfunctory examination which many of the projects received.

For these reasons the public limited company law does not appear to have been the fuse which set off the

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77. Alexander Bergengruen, David Hansemann, (Berlin, 1901) pp. 668, 669, 700.

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Gründerjahre. Public limited companies could be founded in many important German states before 1870, yet these states were no less affected by the boom than Prussia.[78] In addition to this, the legal loopholds of the KGaA and moving offshore made the concession requirement more an apparent barrier than a real one.

Neither does the French indemnity appear to have engendered the boom. The indemnity is supposed to have found its way onto the stock exchange via the Invalidenfonds, the Festungsbaufonds, and the Reichstagsbaufonds: a pension fund for the veterans of the war of 1870 /71, a fund to build fortresses, and a fund to construct a building for the Reichstag. In theory, these funds were invested in ordinary shares and drove up share prices.[79] In fact, the Reich government did not invest these funds in any ordinary shares. Instead, it invested in government bonds - including American and Russian government bonds - and bonds and senior preference shares of various railway companies. In every instance, it paid less for its investment than the peak price for these preference shares during the Gründerjahre, and at the bottom of the

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78. Hamburg: Schinckel, Erinnerungen pp. 211-214; Hundert Jahre Vereinsbank in Hamburg, 1856-1956 [Hamburg, 1956] pp. 59-67; Saxony: Georg Tobias, Die Entwicklung der Aktienbanken in Leipzig (Leipzig, 1907) pp. 31, 52-57, 97; Glagau, Börsenschwindel in Deutschland 99-111 (Saxony) 111-113 (Southern Germany and Alsace Lorraine).

79. Hübener, Wirtschaftskrisis von 1873 pp. 121-123, 138-140.

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Depression, in 1876, was still showing a profit.[80]

What effect the French indemnity did have was an indirect one. First of all, a number of German states redeemed their bonds with their share of the French indemnity, and these sums are assumed to have found their way into the stock market. Secondly, the French transferred the indemnity by purchasing bills on Berlin. This resulted in the most important indirect effect of the French indemnity. In theory, interest rates should form a natural corrective against boom and bust.[81] The transfer of the indemnity meant, however, that interest rates in Berlin were unusually low during the boom, and unusually high during the period following the crash in October 1873: in fact, because of the weakness of the thaler in the foreign exchanges, the Bank of Prussia had to peg interest rates to a higher level than the situation of the economy justified to stem an outflow of gold.[82] The French indemnity did play a role in aggravating the boom and bust through its distortion of the interest rate structure. But this was an indirect effect, which worsened conditions which already existed.

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80. "Bericht der Budget-Kommission über das Gesetz wegen Abänderung des Gesetzes vom 22 Mai 1873, betreffend die Gründung und Verwaltung des Reichs-Invalidenfonds" in SBRT Leg. Periode II Session 1875/76 vol 3: Anlagen Nr. 185, pp 653-716.

81. George Joachim Goschen, "Seven per cent." (January 1865) and "Two per cent." (January 1868) in: Goschen, Essays and Addresses on Economic Questions (1865-1893) with Introductory Notes (1905) (London, 1905) pp. 1-101 is a classic exposé of this theory.

82. Wirth Handelskrisen p. 459. Hübener, Wirtschaftskrisis pp. 118, 120.

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Another circumstance which suggests the French indemnity did not cause the boom was because the boom affected other countries than Germany: Austria-Hungary and the United States were the most affected, but so were Russia, Italy, and even Britain and France.[83] It is possible that the French indemnity made Germany for a few years into the locomotive of the world economy, which sucked in imports from other countries and thus set off booms there. Much of this theory is plausible. Germany was sucking in imports during the boom, partly because domestically produced goods (most notably pig-iron) were not yet good enough to satisfy German consumers, partly because the plethora of money in Berlin made it easy to finance imports through bills of exchange.[84] Nor is it impossible that the German boom was communicated across the Atlantic to the United States: the recovery which set in during the autumn of 1879 was in part brought about by American orders placed for rails in Germany,[85] so the transatlantic link could have already been in place to work in the opposite direction. But it is hard to believe (although war reparations can have bizarre

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83. Wirth, Handelskrisen, pp. 450, 460, Maximilian Müller-Jabusch, So waren die Gründerjahre (Düsseldorf, 1957) p. 65.

84. Wirth, Handelskrisen p. 459; Hübener Wirtschaftskrisis pp. 118, 120, Report of the Select Committee on Coal (London, 18 July 1873) C. 313 Question nos. 6150, 6152, 6154; Ivo Nikolai Lambi, Free Trade and Protection in Germany 1868-1879 (Wiesbaden, 1963) pp. 15-16 (= Vierteljahrschrift für Sozial-und Wirtschaftsgeschichte, Beiheft Nr. 44).

85. Gustav Godeffroy, Hamburg 7 October 1879 and 20 October 1879 to Gerson von Bleichröder, Bleichröder Archive Box XXXIV folder 7.

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effects) that this boom could also have occurred in France. For France also was affected by the boom years of 1872-73, as admitted by France's largest bank, the Société Générale pour favoriser le developpement du Commerce et de l'Industrie en France;[86] and the effect can also be seen in the results of France's oldest and largest coal-mining company, Anzin (see chart reproduced on the following page). Pierre Barral comments that the extraordinarily high level noted around 1875 is not wholly reliable; although I think this is true for the price of the denier (the peculiar shares of Anzin which reflect the company's antique constitution, dating from 1717), because it was very rarely traded and it was only towards the end of the nineteenth century that it was quoted on the bourse of Lille,[87] the figures for dividends are more reliable, and these also reflect the boom of the mid-seventies:

Price of the Denier and Dividends of Anzin (in francs)

	Denier	Dividend
1867	n/a	15,000
1868	n/a	16,000
1869	300,000	18,000
1870	n/a	16,000
1871	n/a	17,000
1872	n/a	27,000[a]
1873	n/a	40,000[b]

86. SG. Société Générale pour favoriser le developpement du commerce et de l'industrie en France 1864/1964 (Paris, 1964) p. 68.

87. Georges Michel, Histoire d'un Centre Ouvrier (Les Concessions d'Anzin) (Paris, 1891) pp. 134-143; Alexandre Cavrois, Les Societés Houillères du Nord & du Pas-de-Calais. (Doctoral Diss, Paris, 1896) pp. 11-13, 42; Pierre Barral, Les Perier dans l'Isère au XIX[e] Siècle d'après leur Correspondance Familiale (Paris, 1964) p. 193 (= Collection des Caniers d'Histoire No. 7).

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SOURCE: Pierre Barral, Les Perier dans l'Isère au XIX^{e} Siècle d'après leur Correspondence Familiale (Paris, 1964) p. 193 (= Collection des Cahiers d'Histoire, No. 7)

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1874	n/a	40,000
1875	1,200,000	33,000
1876	785,700	26,000
1877	646,000	16,000
1878	541,900	14,000
1879	463,200	14,000

NOTES: *According to Cavrois, in 1872 Anzin also redistributed some of its own shares which it had repurchased to prevent them falling into the wrong hands.

**Three shares of the colliery Vicoigne-Noeux were also distributed per denier, valued at 14,000 francs.

SOURCES: Georges Michel, Histoire d'un Centre Ouvrier (Les Concessions d'Anzin) (Paris, 1891) pp. 134-143; Alexandre Cavrois, Les Sociétés Houillières du Nord & du Pas-de-Calais (Paris, 1896) pp. 117,181.

Alexandre Cavrois has said that the coal boom in France began in January 1872 and reached its peak in January 1873.** Another interesting point is that the peak years for dividends from Anzin are 1873 and 1874; the series of dividend payments indicate that Anzin lagged behind the booms in railways and the iron industry, which peaked in 1872 and 1873 respectively. This lag can also be observed in German collieries.**

This boom in coal affected the United Kingdom to such an extent that Parliament in 1873 established a select committee to investigate the scarcity and dearness of coal. This committee concluded that although other factors, such as labour unrest, had contributed to the coal shortage, the chief reason was the increased demand for pig iron, which

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88. Cavrois, Sociétés Houillières pp. 22-23.

89. Bochumer Bergwerks-AG: Saling's Börsen-Papiere 37th edition 1913/1914 p. 702; Gelsenkirchener Bergwerks-AG: GBAG Annual Reports, 1873 and 1874, BBA, GBAG Archiv, Az.1 30 00, Nr. 1; Coal division of the Dortmunder Union: Dortmunder Union Annual Report, 1873/74, Hoesch Werke AG, Werksarchiv, Az. DHHU 1390.

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mainly came from the United States and from Germany.[90] Of particular interest is the evidence of the Middlesbrough ironmaster Isaac Lowthian Bell:

> 6150 Was it chiefly a foreign or a home demand? – It was both. There was no source of pig iron, or bar iron, or rails that was not increased; it went to Germany, to America, and all over the country, and for our own domestic consumption.

In reply to question 6152, Bell presented the following figures for pig iron shipped from the rivers Tyne, Wear, Tees and the Hartlepools for foreign ports (in tons):

1867	168,378	1870	216,909
1868	136,806	1871	330,646
1869	185,777	1872	386,624

The questioning continued:

> 6154. Is that all foreign consumption or coastwise? – It is chiefly to Germany and Holland, and Holland is really <u>in transitu</u> for Germany, and you may take it that two-thirds of it was for Germany.

In reply to the next question, Bell said that although the United Kingdom did export a great deal of pig and rolled iron to the United States, this market was largely served by ironmakers on the west coast, especially in Scotland; ships carried cotton one way, and iron on the way back.

These instances should indicate my thinking on the causes of the boom and bust of the years 1867-1873. Explanations which emphasize financial developments (such as the French indemnity) or legal innovations (such as the public limited companies act of 11 June 1870) are misguided in paying too much attention to superficial developments, and pay too little attention to the fundamental industrial

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90. <u>Select Committee on Coal</u> (1873) C. 313 p. viii.

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boom of these years, when increased railway building in the United States, Germany and Austria-Hungary fed into a heavy industrial boom in iron and steel and coal.

To outline the conjuncture of this period: the late 1840's culminated in the financial crisis of 1847, which brought down the banking house of Moritz von Haber of Carlsruhe.[91] The revolution of 1848 transformed this depression into a financial emergency, so that even sound but illiquid houses like that of Abraham Schaaffhausen of Cologne collapsed. But even during 1848 the German economy began to recover,[92] and by the 1850's was in the grip of a boom. This boom peaked in 1856 and was ended by the crisis of the autumn of 1857. Business conditions then worsened and reached their nadir during the stock exchange panic of April and May 1859 at the time of the Italian war. Commerce then picked up again and led to another boom, which particularly affected Britain in the years 1863-1866.[93] 1866 and 1867 saw another crisis; the boom in Britain was ended by the collapse of Overend, Gurney & Co., France saw the collapse of the Crédit Mobilier in 1867, and the crisis in Britain plus the imminent Austro-Prussian war depressed

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91. Wirth, Handelskrisen pp. 242-244, Heinrich von Treitschke, Deutsche Geschichte im Neunzehnten Jahrhundert (Leipzig, ⁷1920) vol. 5 p. 680.

92. Theodore S. Hamerow Restoration, Revolution, Reaction. Economics and Politics in Germany 1815-1871 (Princeton, 1958) pp. 207-210.

93. Wirth, Handelskrisen, pp. 245-418; David Morier Evans, The History of the Commercial Crisis 1857-58 and the Stock Exchange panic of 1859 (London, 1859); David Morier Evans, Speculative Notes and Notes on Speculation, Ideal and Real (London, 1864).

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German commerce and led to the collapse of eminent private banks such as A.W. Barnitson & Sohn in Halle and Gebrüder Fischer in Barmen.[94] When the Austro-Prussian war did break out, it was greeted on the bourses with something approaching relief. The Vienna Stock exchange, the movements of which may be followed in the weekly reports of Der Aktionär (since Der Aktionär was published in Frankfurt am Main, its reports from Berlin were temporarily cut off during the war), acted in a very strange way considering that the Hapsburg empire was tottering. Vienna rose on the first deceptive reports of Austrian victories; fell, but not substantially so, on the news of Königgrätz; and then rose again upon the news that Austria had ceded Venetia to Napoleon III and had requested the Emperor's mediation. The bulls were champing at their bits, and even the possible collapse of the Danubian empire could barely hold them back. With the return of peace, the boom could begin. The private banks which had suspended during 1866 emerged even stronger, since they converted to the KGaA form and became the Hallescher Bank-Verein and the Barmer Bank-Verein. This boom continued until it reached a temporary peak in 1869, and in October of that year there was a panic on the Vienna stock exchange.[95] Unlike 1866, there was not a sell-off in anticipation of war in 1870; financial circles did not expect war between France and the North German

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94. Kleine, Hallesche Bankgewerbe, p. 72; 1870-1970 100 Jahre Commerzbank (Düsseldorf, 1970) p. 109.

95. Hübener, Wirtschaftsckrisis pp. 91-100.

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Confederation. Even the Rothschilds were taken by surprise when war broke out in 1870.[96] The next few quarters showed the bourses being extremely volatile. The Berlin stock exchange first collapsed because of the usual rush into liquidity which accompanies the outbreak of war. Then it greeted the string of Prussian victories after Wörth "with a rally and yet another rally" in the words of Der Aktionär (hausse und wieder hausse).[97] But as the hopes for a quick end to the war receded, and particularly after Russia denounced the Black Sea clauses of the Treaty of Paris, the Berlin bourse began to decline again and it was not until peace returned in 1871 that the boom could recommence. The boom reached its peak in 1872, and self-doubt began to set in during 1873, encouraged by Eduard Lasker's denunciation of the railway concession system in the Prussian Diet on 7 February. Vienna still hoped for huge business from the opening of the world exposition in that city; and when this business did not manifest itself, the crisis began in the first week of May 1873. Berlin still hoped it would be immune to the crash which had begun in Vienna. It held on until October, when the collapse of the Vereinsbank Quistorp brought down the house of cards. New York had already been hit the previous month, when Jay Cooke & Co. suspended. The depression which followed was extremely severe, and lasted

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96. Hermann von Goldschmidt, Einige Erinnerungen aus längst vergangenen Tagen (Vienna, 1917) pp. 88-89.

97. "Berliner Börse (12 bis 18 November)" in: Aktionär (Frankfurt, Sunday, 20 November 1870) vol. 17 No. 882 p. 752.

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until 1879.[98]

I have taken over from Eduard März[99] his date (1867) for the commencement of the Gründerjahre, which is much earlier than the more customary 1870 or 1871. I think this earlier date is justified, because I see the Gründerjahre, as the culmination of a boom in railway building which began in the mid-eighteen-sixties, which Arthur von Mayer has described as the "Strousberg era" in Prussia.[100] There are other reasons for pushing the Gründerjahre back to 1867. 1867 was the first year since 1858 that the shares of the Disconto-Gesellschaft were quoted above par throughout the year.[101] Another indication is provided by the dividends on the shares of one of the largest German iron and steel companies, the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb:[102]

Dividends of the Phoenix, 1860/61-1873/74 (in %)

	Class "A"	Class "B"
1860/61	6	0
1861/62	7	2.78
1862/63	7 1/2	4 1/6
1863/64	8 1/2	6.94

98. "Berliner Börse (vom 18 bis 24 Okt.)" in: Aktionär (Frankfurt, Sunday 26 October 1873) vol. 20 No. 1035 p. 820. Wirth, Handelskrisen, pp. 519-555, 566-575.

99. Eduard März, Österreichische Industrie-und Bankpolitik in der Zeit Franz Josephs I am Beispiel der k.k. priv. Österreichische Credit-Anstalt für Handel und Gewerbe (Vienna, Frankfurt, Zurich, 1968) pp. 137-150.

100. Arthur von Mayer, Geschichte und Geographie der Deutschen Eisenbahnen von ihrer Entstehung bis auf die Gegenwart 1890 (Berlin, 1891) p. 116.

101. Däbritz, Disconto-Gesellschaft pp. 254-255.

102. Stillich, Eisen-und Stahl-Industrie pp. 149-150.

1864/65	10	11 1/9
1865/66	10½	12½
1866/67	11	13 4/5
1867/68	15	25
1868/69	17	30 5/9
1869/70	16	27 7/9
1870/71	12	16 2/3
1871/72	15	25
1872/73	15	30
1873/74	8	6 2/3

The Phoenix dividends indicate that the boom in the late eighteen-sixties was already so strong that the dividends of one of the largest iron companies of the Ruhr reached levels which they did not even equal during the early eighteen-seventies.

On the face of it, the boom of the late eighteen-sixties was a continuation of the boom of the early eighteen-sixties after the intermission of 1866. But there was one important difference. Whereas the dynamic for the boom of 1862-1866 centred on London, after 1867 the dynamic for the boom was the spate of railway building in Germany and Austria-Hungary, and in the United States.

I view railway building as the leading sector which then fed into the other branches of the heavy industry; in this I am relying on the findings of Holtfrerich (for Ruhr collieries) and Fremdling (for German railways) who have concluded that Ruhr coalmining was not a leading sector, and that German railway building was.[103] Until the 1880's, the railways were the Ruhr collieries' major customer; after

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103. Holtfrerich, Quantitative Wirtschaftsgeschichte das Ruhrkohlenbergbaus; Rainer Fremdling, Eisenbahnen und deutsches Wirtschaftswachstum 1840-1879 (Dortmund, 1975).

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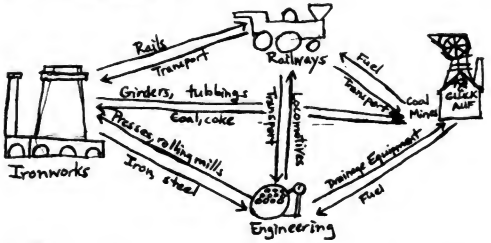
that, the ironworks were their major customer.[104] Collieries, ironworks, railways, and - to add an often neglected fourth element - machine builders are among each other's chief clients and suppliers, and thus a boom in one sector feeds through to the others and for a time becomes self-sustaining. Collieries need iron for tubbings and to construct winding gear; coal is most economically hauled by rail; and drainage machinery is vital for collieries. Ironworks are big consumers of coal and coke; their bulky raw materials and products are best hauled by rail; and they require special machinery such as rolling mills, presses, and wind-blowing apparatus. Railways use coal as their fuel; they are built out of iron; and the machine industry supplies them with locomotives. The machine industry needs coal as a fuel and to heat and shape metal; its raw material is iron; and as a manufacturer of bulky products its transport needs are best served by rail. This is perhaps best shown in a diagram.



104. Dr. Walther Däbritz, "Entstehung und Aufbau des rheinisch-westfälischen Industriebezirks" in: Beiträge zur Geschichte der Technik und Industrie. Jahrbuch des Vereines deutscher Ingenieure ed. Conrad Matschoss (Berlin, 1925) vol. 15 p. 66.

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These connections are well-known; the link between coal mining and railways is as old as the Stockton & Darlington Railway. I want to emphasize that these various connections meant that once a boom in railway building began, it could feed upon itself. This is my interpretation of the boom of 1867-1873; it was the last hurrah of the mainline railway in Germany. By 1873 most of the important lines of the German rail network were complete, and industry fell into a depression from which it did not recover until it developed new sources of demand.

Chief among the railway builders in Germany of this period was Bethel Henry Strousberg, and Arthur von Mayer has described this period in Prussian railway history as the "Strousberg era"; Mayer lists the following railway concessions from this period:[105]

Tilsit-Insterburg	Concession granted	1862[a]
Cologne-Soest		1863[b]
East Prussian Southern Railway (Pillau-Königsberg-Lyck)		1863[a]
Prussia-Netherlands Connecting Railway (Viersen-Venlo)		1863
Berlin-Görlitz		1864[a]
Nordhausen-Erfurt		1867[a]
Mark Brandenburg-Posen (Frankfurt/Oder-Guben-Posen)		1867[a]
Halle-Sorau-Guben		1868[a]
Cottbus-Grossenhain		1868
Crefeld- Kempen district		1868[c]

105. Mayer, Deutsche Eisenbahnen p. 117.

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Hanover-Altenbecken	1868[a]
Uelzen-Langwedel	1870
Halberstadt-Blankenburg	1870
Breslau-Warsaw (Prussian Section)	1870[d]
Pomeranian Central Railway	1870[e]
Berlin Northern Railway	1870[f]
Upper Lusatian Railway	1871[g]
Münster-Enschede	1871
Saal-Unstrut Railway (Grossheringen-Straussfurt)	1872
Angermünde-Schwedt	1872
Aachen Industrial Railway	1872
Dortmund-Gronau-Enschede Railway	1872[c]
Berlin-Dresden Railway	1872
Posen-Kreuzburg Railway	1872[h]
Oels-Gnesen	1872[g]
Marienburg-Mlawka	1872[c]
Cronberg Railway	1872
Wernshausen-Schmalkaden	1872
Mulde Valley Railway (Glauchau-Wurzen)	1872[i]
Unstrut Valley Railway (Artern-Naumburg)	1872

NOTES: [a] Built by the railway contractor Bethel Henry Strousberg.
[b] Dissolved before construction began.
[c] Financed by the Disconto-Gesellschaft.
[d] The speculator Prince Biron of Courland was behind this project.
[e] The conservative politican and speculator Hermann Wagener was behind this project.
[f] Prince Biron and Prince Putbus (nicknamed Kaputbus) were behind this project.
[g] Built by the railway contractor Ferdinand Plessner.
[h] Promoted by Prince Biron; financed by Gerson Bleichröder and Jacob Landau.
[i] Financed by the Berliner Handels-Gesellschaft.

In addition to the railways enumerated above, Strousberg also built the Right Bank of the Oder Railway, which Mayer does not list, because although its concession was granted in 1865, it was an expanded version of the Oppeln-Tarnowitz Railway of the 1850's; and Mayer does not mention at all the Chemnitz-Aue-Adorf Railway, the Trentschin-Neustädtl Railway, and the Marburg-Warburg Railway. Outside of Germany Strousberg built railways in Hungary (the Hungarian Northeastern Railway); Russia (Brest-Grajewo); and Roumania.

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Strousberg also made unsuccessful bids for: the Brunswick State Railways; the Saxon State Railways; the Serbian Railways; and a railway in Schleswig-Holstein. In addition to these railway interests, Strousberg also owned the locomotive works built up by Georg Egestorff in Hannover-Linden; the Neustädter Hütte in the Harz; blast-furnaces at Othfresen, plus iron ore mines around Döhren; mineral rights around Clausthal-Zellerfeld; the Dortmunder Hütte; the coal mine "Glückauf Tiefbau" in Barop; and a huge heavy industrial and forestry complex centred around Zbirow castle in Bohemia. In addition to these holdings, Strousberg also possessed vast amounts of property, including the citadel of Antwerp, which he intended to redevelop. The war of 1870 plunged Strousberg into a liquidity crisis, in which his largest problem was the Roumanian railways. Strousberg had to surrender most of his empire (chiefly to the Disconto-Gesellschaft) and retreated to his Bohemian redoubt. He formed his second empire, which included the Deutsche Actien-Gesellschaft für Bergbau, Eisen-, und Stahl-Industrie, which possessed the Ruhr coal mines "Urbanus" and "General"; the Mehltheuer-Weida Railway in Thuringia; the Waag Valley Railway (Pressburg-Troppau-Prussian border) in Slovakia; the Paris-Narbonne Railway (Bourges-Gien); the Prag-Wiener Aktiengesellschaft für Waggon- und Eisenbahnbedarf in Prag-Bubna; and the Elbinger Waggonfabrik. In 1875, however, Strousberg kited a bill of exchange on the Moscow Commercial Loan Bank and was arrested in Russia; his ventures in Russia, Germany and Austria-

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Hungary entered bankruptcy. With the help of August Sternberg, Strousberg then attempted yet another come-back in the 1880's, building street railways in Danzig and Königsberg, but did not meet with success and died in 1884.[106]

Strousberg was only a member of a brilliant constellation, which included Count Langrand-Dumonceau, Ferdinand Plessner, Baron Maurice de Hirsch, and the Chevalier d'Ofenheim; but I have discussed him at some length, because he was the most important figure for the Berlin market, and because he will play a role in some ventures I shall discuss below, such as the founding of the Dortmunder Union.

Statistics do exist for the total length of railways opened, but they are not wholly satisfactory. It seems clear that there is a lag, which Max Mengeringhausen estimates at one to three years, between when the railways were constructed, and when they are declared open; in addition, it is by no means clear how these statistics account for multiple-tracking. The raw figures, are, however, as follows:

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106. The best account on Strousberg is Gottfried Reitböck, "Der Eisenbahnkönig Strousberg und seine Bedeutung für das europäische Wirtschaftsleben" in: Beiträge zur Geschichte der Technik und Industrie. Jahrbuch des Vereines deutscher Ingenieure (Berlin, 1924). vol. 14 pp. 65-84; Stern, Gold and Iron pp. 358-366; Günter Ogger, Die Gründerjahre. Als der Kapitalismus jung und verwegen war (Munich, Zurich, 1982) pp. 157-172.

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Total length of railway track in various countries[107]

	1860	1865	1870	1875	1879	1882
Britain	16,797	21,395	24,383	24,604	28,491	29,531
France	9,439	13,577	17,462	n/a	25,183	28,880
Germany	11,088	13,839	18,450	19,513	33,094	34,950
Austria-Hungary	5,160	6,395	9,761	n/a	18,335	19,696
U.S.A.	49,255	56,715	85,288	97,056	135,029	181,326
Russia	1,589	3,925	11,243	n/a	23,400	24,452

The reason for my doubts should be clear from the above figures: it is difficult to believe that Germany built over thirteen thousand kilometres of railway during the depression years of 1876-1879. Max Mengeringhausen has produced a more satisfactory series of figures:

Percentage Increase in Germany Railways, 1869-1880[108]

1869	6.6%	1875	9.7%
1870	8.9%	1876	4.8%
1871	Territorial change makes increase meaningless	1877	4.8%
		1878	2.5%
1872	4.4%	1879	5.7%
1873	6.5%	1880	0.1%
1874	6.7%		

Mengeringhausen, whose judgement I trust, says that the increase in railway length only enters the statistics after one to three years. The 1878 figure really corresponds to the terrible year for the iron industry, 1876.[109]

A more vivid and reliable picture of the surge and collapse of the railway boom, however, is provided by the

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107. Lothar Hertel, Die Preisentwicklung der Unedlen Metalle und der Steinkohlen seit 1850 (Diss. Halle a.d. Saale, 1911) pp. 21, 26, 38, 49.

108. Max Mengeringhausen, Die Entwicklung der Schienenfabrikation in Deutschland Typescript, Munich, 1928 p. 48.

109. Mengeringhausen. Schienenfabrikation p. 48.

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figures for locomotives ordered by the North German railways:[110]

1870	281	1876	276
1871	444	1877	911
1872	487	1878	243
1873	900	1879	44
1874	1038	1880	37
1875	522		

There are problems with these figures as well. It is not clear whether or not they take account of orders which were placed and later cancelled; the figure of 1038 for 1874 is a peculiar lag; and the figure of 911 for 1877 is very peculiar indeed. But in spite of these oddities, these figures are good at conveying the surge in railway activity which peaked in 1873, and the catastrophic collapse which followed.

The boom which culminated in the crash of 1873 went through the German economy like a sheep through a boa constrictor. First, the railways boomed; then, the ironworks followed; the collieries followed in the wake of the first two industries. Iron prices doubled in Germany in the first six months of 1872.[111] This brought the downfall of the railways; by the third quarter of 1872 Der Aktionär noted that railways' earnings were declining because although their costs were rising, they were not allowed to increase their rates and in some instances had to reduce

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110. Walther Däbritz and Erich Metzeltin, Hundert Jahre Hanomag (Düsseldorf, 1935) p. 74.

111. Dortmunder Union Annual Report 1872/73 p. 9. in: Hoesch AG, Werksarchiv, Az. DHHU 1390 (1873).

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them.[112] If 1872 was the year the railways peaked and then began to decline, 1873 was the turning point for the iron industry.[113] Coal prices increased very rapidly in 1873, so that Kladderadatsch suggested that it could be best used as jewellery. In 1874 the catastrophe spread to the coal industry as well.[114]

This then is my picture of the boom of 1867-1873: a railway boom which fed through into heavy industry. 1873 saw both the culmination and to a certain extent the end of Germany's main period of railway building, because by then all the major lines were complete or soon to be finished. This is reflected in the disastrous decline in locomotive orders. The boom moved upstream through the German economy, and as the prices of first iron, and then coal were bid up to giddy heights, the boom was choked off in the consuming industries.

F. The Advance and Retreat of the Crédit Mobilier Concept.

I now want to discuss the question why universal banks exist in Germany but not in other major industrial countries. I shall discuss the formation of the Crédit

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112. "Betriebs-Resultate deutscher und östreichischer Privatbahnen in den drei ersten Quartalen 1872 und 1871" in: Aktionär (Frankfurt/Main,17 November 1872) vol. 19 No. 986, Beilage.

113. Dortmunder Union Annual Reports 1872/73 and 1873/74 in: Werksarchiv, Hoesch AG, Az. DHHU 1390.

114. Dortmunder Union Annual Reports 1873/74 and 1874/75 in: Hoesch AG, Werksarchiv, Az. DHHU 1390. GBAG Annual Report 1874 p. 5 in: BBA (GBAG Archiv) Az. 1 30 00 Nr.1.

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Mobilier; an aspect of the Crédit Mobilier which I think is very important and very influential on German banking customs, namely speculation in the bank's own shares; and finally, the actual advance and retreat of the Crédit Mobilier and its imitators in various countries.

Richard Tilly has argued that German universal banks do not derive from the Crédit Mobilier, but rather are a continuation of the industrial banking tradition of Rhenish private bankers and of Court Jews before them.[115] There is an element of truth to this, but I find Helmut Böhme's argument that German universal banks arose in opposition to private bankers more convincing. Aside from a few forward-looking private bankers like Freiherr Abraham von Oppenheim, who helped found the Bank für Handel und Industrie in Darmstadt, private bankers wanted to meet the increasing capital needs of German railways and industry in the 1850's through methods which would preserve their position as intermediaries. One such innovation was the founding of the Bank des Berliner Kassen-Vereins, which allowed the private bankers of Berlin to rediscount each other's paper; another innovation was the "Privat-Aktienbanken", the establishment of regional, privately managed note-issuing banks. These banks had the word "Privat" in their name because they were privately managed; the Preussische Bank, like the Bank of England and the Banque de France, had private shareholders but was managed by the government. These note-issuing banks included: the Cölnische Privatbank, founded 1855; and the

115. Tilly "German Banking" pp. 118-119.

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Dortmunder Privat-Aktienbank, the Danziger Privat-Aktienbank, the Provinzial-Aktienbank des Grossherzogthums Posen, and the Hagener Privat-Aktienbank, all founded 1857. Helmut Böhme has argued that the most powerful man in commercial matters in Prussia in this period, the Minister of Commerce and Finance August von der Heydt pursued a deliberate policy of introducing financial innovations which would make credit easier to come by, but would not raise up powerful competitors to the private bankers: he was very ready to grant concessions to form joint-stock industrial companies, he granted the concessions for the Bank des Berliner Kassen-Vereins and for the Privat-Aktienbanken, but he would not grant a concession to set up a universal bank on the model of the Crédit Mobilier in Prussia. Von der Heydt was himself a private banker - he had been the senior partner of von der Heydt-Kersten & Söhne of Elberfeld before he became a minister - and he was willing to assist the formation of Privat-Aktienbanken because they preserved the role of the private banker as a credit intermediary, but did not raise up a competitor to the private banker in the way that the concession of universal banks would. This argument is more convincing than Tilly's view of the universal banks as the continuation of traditional business of private bankers.[116]

One of the motives which led to the formation of universal banks was the feeling that discount facilities

116. Böhme, "Preussische Bankpolitik 1848-1853", Gesetz-Sammlung für den preussischen Staat 1855 pp. 720-740; 1857 pp. 193-216, 241-280, 705-724.

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were inadequate. Bertrand Gille mentions that this was the case in France, where businessmen were particularly unhappy with the Bank of France's demand for three signatures on a bill before it would discount it.[117] That this unhappiness was shared by German businessmen is shown by the formation and the very name of the Disconto-Gesellschaft, where various textile manufacturers and other businessmen came together to discount each other's paper. Private bankers finally caved in to the move towards universal banks during the flood year of 1856, when a number of Berlin private bankers formed the Berliner Handels-Gesellschaft. But the difference between this universal bank, formed by private bankers, and the Disconto-Gesellschaft, formed by merchants and textile manufacturers, can be seen by contrasting the lists of board members and director of these two banks with that of the Bank des Berliner Kassen-Vereins. The administrative board and the shareholders' committee of the Bank des Berliner Kassen-Vereins provides almost an Almanach de Gotha of Berlin private bankers. The number of interlocks with the administrative board and partners of the Berliner Handelsgesellschaft is very striking. In the period 1856-1900, seventeen members of Kassen-Verein's shareholders commitee and/or administrative board were also members of the administrative board of the Berliner Handels-Gesellschaft. In that same period, three partners of the

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117. Bertrand Gille, "Les Saint-Simoniens et le Crédit" in: Gille, La Banque en France au XIX^e Siècle. Recherches Historiques (Geneva, 1970) pp. 106-107. (= Travaux de Droit, d'Économie, de Sociologie et des Sciences Politiques No. 81).

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Berliner Handels-Gesellschaft were also members of one or other of the organs of the Kassen-Verein. The administrative board members of the Berliner Handels-Gesellschaft who held these interlocking directorships included the crème-de-la-crème of Berlin private bankers: F. Martin von Magnus; Alexander Mendelssohn; Robert Warschauer; Gustav Güterbock (of the firm Moritz Güterbock & Co.; a member of this firm subscribed for the French war loan during the war of 1870, and was imprisoned for treason); Gerson Bleichröder; Ferdinand Jaques, who financed Strousberg and went down with his protégé in 1875; Hermann Zwicker, a partner in Gebrüder Schickler; and Max Anton Wagner, a partner in Anhalt & Wagner. The contrast could not be greater with the Disconto-Gesellschaft, where there are only three interlocks during the same period: the Disconto-Gesellschaft partner Emil Hecker, who only became a member of the shareholder's committee more than two decades after the Disconto-Gesellschaft was founded, in 1877; the Disconto-Gesellschaft supervisory board member Richard von Hardt, who joined the shareholders' committee in 1881; and the Disconto-Gesellschaft partner Alexander Schoeller, who joined the shareholders' committee in 1894. This, plus occasional remarks let drop by the Berlin correspondent of Der Aktionär convince me that there was a profound hostility on the part of many Berlin private bankers to the new Disconto-Gesellschaft, which was not a continuation of the old private banking business, and that the Disconto-Gesellschaft and the Berliner Handels-Gesellschaft had two

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very different characters: the former was a cloth manufacturers' and other businessmen's bank, formed in opposition to the private bankers, the latter an association of private bankers.[118]

It is unfortunately not possible to repeat this comparison for other major banks, because we do not possess complete lists of the directors and supervisory boards of the other banks. There is some more overlap in the case of the Deutsche Bank: four of the founders of the Deutsche Bank - Hermann Zwicker, Adelbert Delbrück, Victor Freiherr von Magnus, and Adolph Meyer - were also members of the various organs of the Kassen-Verein. But this is because the Deutsche Bank was not founded as a domestic universal bank initially, but rather to handle foreign trade operations for these private banks. Thus these men - whose membership of the Kassen-Verein usually precedes the formation of the Deutsche Bank in 1870 - were sitting on the boards of the Kassen-Verein not as representatives of the Deutsche Bank, but rather on behalf of their private banks (Gebrüder Schickler; Delbrück, Leo & Co.; F. Mart. Magnus; and E.J. Meyer). The Deutsche Bank finally won representation in its own right in 1881, when its director Hermann Wallich joined the shareholders' committee of the Kassen-Verein. That same year also saw the Bank für Handel und Industrie win representation, when its director, Franz Dülberg, joined the

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118. Berliner Handels-Gesellschaft 1856-1956 pp. [277]-[279]; Disconto-Festschrift pp. 263, 269-271. Die Bank des Berliner Kassen-Vereins 1850-1900. Denkschrift zum 1. October 1900 [Berlin and Leipzig, 1900] pp. 63-69.

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shareholders' committee. No other joint-stock banks appear to be represented, unless the coal merchant, Eduard Arnhold, who had close ties to the Dresdner Bank, represented the Saxon institution when he joined the shareholders' committee in 1895.[119]

To go over this ground again, I do not see, as Tilly does, the German universal banks as a continuation of the business of private bankers. In the early years, before 1856, they arose in opposition to existing private banks, and the hostility of private bankers to the Disconto-Gesellschaft in particular can be seen in their excluding the Disconto-Gesellschaft from the councils of the Bank des Berliner Kassen-Vereins, the private bankers' own club, until 1877.

In contrast to Tilly, I see the rise of universal banks not growing out of traditional private banks, but rather being set up in imitation of the French Crédit Mobilier. A number of institutions anticipated the idea of the univerasl bank: the Société Générale de Belgique of 1822,[120] the proposals of the French financier Jacques Laffitte,[121] and the Hungarian Commercial Bank of Budapest of 1841 (Pesti

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119. Berliner Kassen-Verein pp. 63-69; Advertisement to subscribe to shares of the Deutsche Bank in Aktionär (Frankfurt/Main, Sunday 27 March 1870) vol. 17 No. 848 Zweite Beilage p. 221.

120. Cameron, France and Economic Development pp. 119-123.

121. Cameron, France and Economic Development pp. 112-114; Bertrand Gille "Les Saint-Simoniens et le Crédit" in: La Banque en France au XIX^e Siècle. Recherches Historiques (Geneva, 1970) pp. 105-124.

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magyar kereskedelmi bank).[122] There are some interesting parallels betwen the Belgian and Hungarian institutions: in each case they were established to develop the economy of a subject nation, in the hope that this would increase the satisfaction of the subject nation with its lot. But although there were a number of pioneers who stumbled upon the idea before them, the first fully worked-out programme for a universal bank was devised by the Pereire brothers, who formed the Société Générale du Crédit Mobilier in November 1852. émile and Isaac Pereire were followers of the utopian socialist ideas of Claude-Henri, Count de Saint-Simon. Saint-Simonians saw banks as an economic irrigation system, shifting money from areas of capital surplus to areas of capital deficit. They also devised the concept of the "valeur omnium";[123] a bank would make loans to industry and then repackage these loans as short-term bonds which it would sell to the public. The solid credit of the bank would enable it to raise funds more cheaply than the uncertain credit of the industrialist. The Pereires also planned an international network of Crédit Mobiliers, to even out the fluctuations between the various money markets. Unfortunately the plans to sell short-term bonds with a maturity of as little as 45 days did not work out - thus the Crédit Mobilier did not have the chance to tap the funds of

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122. I owe this reference to Dr. Robert Nötel of St. Antony's College, Oxford, and Geneva.

123. The Pereires took the term "omnium" over from a British financial vehicle, a security which combined shares and stocks in one package (known as "units" on Wall Street). The concepts have little in common except the name.

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the small saver, as modern banks can do through certificates of deposit and extensive branch networks. For its funds, the Crédit Mobilier relied on its own substantial capital - 60 million francs (equal to 48 million marks) - and a large amount of deposits, which at times rose as high as 100 million francs (80 million marks). The companies for which the Crédit Mobilier underwrote securities also had to maintain current accounts at the Crédit Mobilier; the railway companies in particular often ran large credit balances. For a variety of reasons, the Crédit Mobilier concentrated more and more on share underwritings and trading for its own account on the bourse; problems with the North of Spain railway, a bankrupt property company, and reverses on the stock market due to the Overend, Gurney crisis of 1866 caused the collapse of Crédit Mobilier in 1867.[124]

There is another element of the Crédit Mobilier which is usually not given sufficient emphasis, but which became a striking characteristic of the German universal banks: this is the practice of banks speculating in their own shares. Since the Crédit Mobilier and other universal banks borrowed short and lent for unusually long terms, it was vital that the banks maintain the confidence of their depositors. The theory was that the best way to retain this confidence was by maintaining the share price on the stock exchange of the bank's own shares at a high level. That the Crédit Mobilier

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124. Johann Plenge, Gründung und Geschichte des Crédit Mobilier (Tübingen, 1903); Cameron, France and Economic Development pp. 134-158, 166-171, 190-195.

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speculated in its own shares is well known. What is less well known is that speculation in their own shares was engaged in all the time by German universal banks from 1853 until 1931. The Bank für Handel und Industrie had massive positions in its own shares during the 1850's.[125] In 1860 the leading German financial weekly, Der Aktionär, remarked that punters of the Berlin bourse were now wary of selling short shares of the Disconto-Gesellschaft, because the Disconto-Gesellschaft had proved extremely sophisticated at manipulating the market in its own shares.[126] By 1900 this practice had become very subtle. When a bank felt its shares were unduly weak, it would buy its own shares - but, to guard against a sell-off in the bank sector or even a general stock market decline, it would sell short an equal amount of shares of the competitor it most disliked. In 1910 the Berliner Handels-Gesellschaft noticed an unusual weakness in its shares and intervened in the market, at the same time hedging its position by selling short Disconto-Gesellschaft shares, which was the bank Carl Fürstenberg hated most that year. Yet massive sales of the Berliner Handels-Gesellschaft shares continued so the bank repeatedly intervened - always hedging through selling short Disconto-Geselleschaft shares. Fortunately the floor brokers of the two banks were extremely skillful and soon

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125. Wirth, Handelskrisen pp. 293-294: Joseph Hansen, Gustav von Mevissen. Ein rheinisches Lebensbild 1815-1899 (Berlin, 1906) vol 1. p. 769 and note 2; Cameron, France and Economic Development pp. 149-150.

126. "Berliner Börse (2. bis 8. Juni)" in: Aktionär (Frankfurt, Sunday, 10 June 1860) vol. 7 No. 337 p. 396.

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began to suspect what was happening. One day the Disconto-Gesellschaft broker went up to the Berliner Handels-Gesellschaft broker and said: "I have a customer for a large packet of Berliner Handels-Gesellschaft shares; could you sell me some?" The Berliner Handels-Gesellschaft broker concluded the deal - it amounted to 1¹/⁴ million marks - and said, "And don't pay me in cash - give me Disconto-Gesellschaft shares, because I have a large customer for them as well!" Thus the two banks were able to unwind their positions.[127]

Clearly this practice was a recipe for disaster; and when disaster did strike in 1931, the Deutsche Bank und Disconto-Gesellschaft (the two banks had merged in October 1929) owned 27% of its own shares; the Dresdner Bank 34%, the Commerz- und Privatbank 50%, and the Darmstädter-Nationalbank 60% of its own shares.[128] The Reich intervened and effectively nationalized the banks by taking over these share packets. More skillful banks could purchase their own shares indirectly by extending loans to their traditional industrial "friends", who then purchased the shares: the Deutsche Bank, for example, had Mannesmann purchase 3 million RM Deutsche Bank shares in 1932; it had Siemens

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127. Paul Wallich, Lehr- und Wanderjahre pp. 384-385.

128. Richard Lewinsohn and Franz Pick, La Bourse. Les Diverses Formes de la Speculation dans les Grandes Bourses Mondiales (Paris, 1933) pp. 21-24.

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purchase another 2 million RM.[129] Another subtle technique was to purchase shares via private banks in which the joint stock banks held a silent partnership, which has the advantage that private banks do not need to publish balance sheets. The Deutsche Bank appears to have used the Frankfurt private bank Lazard Speyer-Ellissen to purchase Deutsche Bank shares.[130] Manipulating the market in its own shares was a distinctive characteristic of the Crédit Mobilier; it was also a distinctive characteristic of the German universal banks.

As I mentioned above, another object of the Crédit Mobilier was to establish further copies of itself throughout Europe: the Bank für Handel und Industrie at Darmstadt in 1853, the Sociedad General de Credito Mobiliario Español at Madrid in 1856, the Società Generale di Credito Mobiliare Italiano at Turin in 1863 (which collapsed in 1893), the Algemeene Maatschappij voor Handel en Nijverheid at Amsterdam in 1863, and the International Financial Society at London in 1863. The Crédit Mobilier inspired numerous imitators: to forestall the Pereires setting up their own bank in Austria, the Rothschilds founded the Kaiserlich-Königliche privilegirte Oesterreichische Credit-Anstalt für Handel und Gewerbe in

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129. Office of Military Government, United States. Finance Division: Financial Investigation Section, Ermittlungen gegen die Deutsche Bank 1946/1947. (Nördlingen, 1985) pp. 108-109, 125.

130. Kurt Gossweiler "Die Rolle der Grossbanken im Imperialismus" in: Jahrbuch für Wirtschaftsgeschichte (East Berlin, 1971) Part III pp. 50-51.

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1855. The high tide for founding new banks came in 1856. That year saw the formation of the Schweizerische Credit-Anstalt in Zurich, the Allgemeine deutsche Credit-Anstalt in Leipzig, the Vereinsbank in Hamburg, the Norddeutsche Bank in Hamburg, the Mitteldeutsche Credit-Bank in Meiningen, the Schlesischer Bank-Verein in Breslau, the Dessauer Credit-Anstalt, the Coburg-Gothaische Credit-Anstalt, the Preussische Handels-Gesellschaft in Königsberg, and the Magdeburger Handels-Compagnie. These last two banks did not survive, being liquidated by the end of 1858, and the Schweizerische Credit-Anstalt (now, of course, one of the big three Swiss banks) the Allgemeine deutsche Credit-Anstalt (usually abbreviated as Adca), and the Schlesischer Bank-Verein encountered serious difficulties after 1857. 1856 also saw the Disconto-Gesellschaft change its corporate bye-laws so that it was no longer a co-operative credit union, but a full universal bank. 1856 also was the year that the Disconto-Gesellschaft pioneered the corporate form of the Kommanditgesellschaft auf Aktien, which was copied by all the banks founded in Prussia, namely: the Berliner Handels-Gesellschaft, the Schlesischer Bank-Verein, the Preussische Handels-Gesellschaft and the Magdeburger Handels-Companie.[131]

The early 1860's were also very fertile for new banks. As I mentioned above, the Crédit Mobilier set up banks in 1863 in Amsterdam, Turin, and London. A consortium of rival

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131. Cameron, France and Economic Development pp. 160-161; Däbritz, Disconto-Gesellschaft pp. 64-67.

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private bankers established a bank in London - the General Credit and Finance Company - and a bank in Paris, the Société Générale pour favoriser le developpement du Commerce et de l'Industrie en France, which saw the light in 1864. If universal banks did not take hold in countries outside Germany, it was not for want of trying. To explain why they did not take hold, I will discuss in more detail the two banks I have just mentioned: the French Société Générale and the General Credit and Finance Company.

The driving force behind the Société Générale was the French railway king Paulin Talabot, the head of the Chemin de Fer de Paris à Lyon et la Mediterranée (the railway from Paris to Lyons and Marseilles). Talabot had the Société Générale invest in all his pet projects: a steel company, the Société de Denain-Anzin; the Algerian iron ore mines Mokta-el-Hadid; and a cross-haul metallurgical combine between iron ore mines at Krivoi Rog in the Ukraine and the coal deposits of the Donetz basin. All these projects took a long time to pay off, when they paid off at all; and although they might appeal to a railway magnate, who could profit from the freight generated by heavy industry (in particular hauling iron ore north over the P.L.M. to the French steel districts), they were not suited to a bank which needed to stay liquid. The bank also had an unfortunate experience with Peruvian bonds, which the company history refers to as "the guano affair". As a result of these experiences and with the collapse of the Crédit Mobilier in 1867 as a recent memento mori, the

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directors decided in 1869 "not to extend" their industrial promotions. Thereafter the Société Générale worked off the burden Talabot had imposed and became a commercial bank, rather than an investment bank. The classic French commercial bank, the Crédit Lyonnais of Henri Germain, began by engaging in investment banking as well; but heavy losses on investments in the Lyons chemical industry between 1863 and 1870 made Henri Germain decide to concentrate on commercial banking. Thus the events of the 1860's - of which the most spectacular was the collapse of the Crédit Mobilier - convinced the French banking system of the virtue of separating commercial and investment banking, and introduced the present distinction between "banques de dépôts", such as the Société Générale and the Crédit Lyonnais, and "banques d'affaires", such as the Banque de Paris et des Pays-Bas, the Rothschild private bank, and the later Banque de l'Union Parisienne.[132]

In England, the events of the 1860's paralleled those in France, in that they reconfirmed a separation of investment from commercial banking which was already traditional. The new finance houses of the 1860's were trying to breach this barrier, and foremost among them was the General Credit and Finance Company. If the French

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132. SG. Société Générale pour favoriser le developpement du commerce et de l'industrie en France 1864/1964 (Paris, 1964) pp. 51-55, 67-72; Bertrand Gille, "Les premières années de la Société Générale" in: Gille, La Banque en France au XIX^e Siècle, pp. 207-266; Claude Fohlen, "The Industrial Revolution in France 1700-1914" in: Carlo M. Cipolla, ed. The Fontana Economic History of Europe. The Emergence of Industrial Societies (Glasgow, 1973) Part One, pp. 37-38.

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Société Générale was dominated by Talabot, the English General Credit and Finance was dominated by the great railway contractor, Thomas Brassey. One of the first tasks of the new bank was to lend Brassey and his fellow contractors Peto and Betts £300,000 so they could complete the Danish railways. The bank also supplied money to complete the Central Argentine Railway, another Brassey venture. Then came the Overend, Gurney panic of 1866. Sir Samuel Morton Peto failed, and even more solid contractors, such as Brassey and Joseph Firbank, escaped only by a whisker. 90% was wiped off the value of General Credit's shares; only a cash call of £2 a share saved it too from suspension. In November 1866 it renounced all "financing" and promised to concentrate on normal bill market operations; it went into liquidation and transferred its business to the General Credit and Discount Company of London, with a new capital of two million pounds, of which 1½ million was paid up. This was a large capital for a discount house, but most was locked up in illiquid - chiefly railway- securities, which led the Economist to declare that although there was room for a third "good discount house", it could not be General Credit because of its "other" securities. In 1885 General Credit merged into the Union Discount Company of London Limited, which still exists today.[133] Thus the events of the 1860's - in England, the Overend, Gurney crisis, in France, the collapse of the

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133. W.T.C. King, History of the London Discount Market (London, 1936) pp. 231-232, 257-258, 261-262; Cameron, France and Economic Development pp. 184-185.

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Crédit Mobilier - confirmed an informal separation of commercial from investment banking, which still characterizes both banking systems.

In other countries, this separation was imposed through statute law in reaction to the crises of the 1930's. When the Italian banking crisis broke out in April 1931, the government intervened, took over the banks' holdings of industrial shares and imposed a legal separation of commercial from investment banking. These industrial shares were turned over to a government-owned holding company, the Istituto per la Ricostruzione Italiana (I.R.I.) - still the largest non-oil company in Europe. In the United States in the 1920's, a number of major commercial banks, including the National City Bank and the Chase National Bank, formed affiliates to engage in securities trading. This was regarded as one of the abuses which led to the economic crisis of 1929-1933, and so the separation of commercial from investment banking was enshrined in law by the Glass-Steagall Act of 1933. Similar legislation was also enacted in Belgium. Finally, when MacArthur was re-shaping Japan after 1945, he introduced legislation modelled on the Glass-Steagall Act which became Article 65 of the Japanese Banking law and separated the two types of banking. The only major industrial country where this separation has not been imposed, whether by strength of informal custom or through

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legislation, is Germany.[134]

In my outline of the literature above (see pp. 3-7) I have mentioned the various debates in Germany about universal banks: the criticism by Max Wirth, Adolf Wagner, Paul Model and others, and the very successful defence of universal banks mounted by Adolf Weber, Johann Plenge, and Jacob Riesser. Suggestions for reform were also made during the banking crisis after 1931: I mentioned the proposal of Ernst Wagemann and the offer by the Warburgs. Yet none of these proposals carried the day. Instead a committee was established in 1933 to investigate the banking system under the chairmanship of Horace Greeley Hjalmar Schacht, who was then once again president of the Reichsbank. The committee found in favour of the status quo - either because Schacht personally believed in the status quo, or because he did not want to set berserkers like Gottfried Feder loose to reform the banking system. The Nazis themselves had few constructive suggestions about reforming the banking system: when they thought about it at all, they usually suggested nationalization. After 1945, the occupying powers pursued a different policy from the one in Japan; instead of breaking up banks by function, they broke them up regionally, on the

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134. "Banks and Industry in the Interwar Period" in: Journal of European Economic History (Rome, Fall 1984) vol. 13, No. 2 pp. 131-136, 253-255; Karl Erich Born, Geld und Banken im 19. und 20. Jahrhundert (Stuttgart, 1977) pp. 518-521; Henry C. Wallich and Mabel I. Wallich, "Banking and Finance" in: Hugh Patrick and Henry Rosovsky eds. Asia's New Giant. How the Japanese Economy Works (Washington, D.C., 1976) pp. 279-298.

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model of the American system - partly, one presumes, because this type of reform fitted in well with the division of Germany into zones of occupation. In the Soviet Zone, the banks were temporarily closed in 1946, and have never since re-opened. In the western zones, by 1957 the regional banks had re-merged themselves into their old pre-war manifestations of Deutsche Bank, Dresdner Bank, and Commerzbank. The German banking system has thus remained unreformed.

The usual explanation as to why Germany has universal banks, and other countries do not, is assumed to lie within Germany. A shortage of capital is the usual reason given. Knut Borchardt has argued that the idea that Germany suffered from a capital shortage at the beginning of the nineteenth century is a myth.[135] The behaviour of interest rates confirms this view: Borsig could borrow at slightly over 3% in the 1840's, whereas interest rates in lands which suffer from a genuine capital shortage, such as Uruguay, were 12-18% for debts in hard currency.[136] I have intentionally devoted much space to the development of other banking systems, because the German banking system is different not because of some peculiarity in the German condition - universal banks have been set up in nearly every

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135. Knut Borchardt, "Zur Frage des Kapitalmangels in der ersten Hälfte des 19. Jahrhunderts in Deutschland" in: Jahrbücher für Nationalökonomie und Statistik (Stuttgart, 1961) vol. 173 pp. 401-421.

136. Born, Geld und Banken, pp. 91-95; on Uruguay see Eduardo Acevedo, Obras Históricas. Anales Históricos del Uruguay (Montevideo, 1934) vol. 3 pp. 780-781.

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country at one time or another - but rather because other countries have reformed their banking systems, whereas such a reform has never occurred in Germany. The other point I wish to bring out is that this distinction has not arisen because of a chronic condition, such as a capital shortage; rather it is because of reactions to specific acute and traumatic crises which throw the defects of universal banking into sharp relief.

G. Raising Capital for Germany's Industrial Development

The construction of the German railway network saw a massive mobilization of capital within a remarkably short period. The first German railway (Nuremberg-Fürth) was opened on 7 December 1835. When the private railways in the kingdom of Prussia were taken over by the state at the end of the 1870's, the Rhenish Railway Company had (1880) 224,586,000 marks class "A" ordinary shares in circulation, and 37½ million marks class "B" ordinary shares; the Cologne-Minden Railway Company had 117 million marks worth of ordinary shares in circulation, plus 10½ million marks 5% bonds, 230,273,500 marks 4½% bonds, and 129 million marks 4% bonds.[137] The figures for the shares are nominal capital; the market capitalizations of the railways were usually higher still. In terms of nominal capital, if we include the bond issues, the Cologne-Minden Railway Company easily beats what is usually considered the institution with the highest nominal capital in Germany before 1914 - the

137. A. Mayer, Geschichte und Geographie der Deutschen Eisenbahnen pp. 400, 478.

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Disconto-Gesellschaft on the eve of the First World War, when it had absorbed the Schaaffhausen'scher Bankverein and attained a nominal capital of 300 million marks.[138] The Cologne-Minden Railway Company was also larger than the largest industrial companies as of December 1913: Fried. Krupp AG, which had a nominal capital of 180 million marks; the Gelsenkirchener Bergwerks-Actien-Gesellschaft, which had a nominal capital of 180 million marks and a market capitalization of 331.02 million marks; and the Allgemeine Electricitäts-Gesellschaft, which had a nominal capital of 155 million marks, and a market capitalization of 363.94 million marks.[139] Admittedly the nominal capital and the market capitalization of the A.E.G. does not tell the whole story, because the A.E.G. was only the flagship of a concern with numerous subsisdiaries and affiliates, such as the Bank für elektrische Unternehmungen (the "Elektro-Bank") in Zurich; a good case can still be made that the big railways, like the Rhenish Railway Company and the Cologne-Minden Railway were the largest enterprises in Germany before 1914, a point which is usually overlooked because they disappeared from the private sector around 1880. It is astonishing that so much capital was accumulated in such a short time. Where did this capital come from?

Before I set out to answer this question, I must

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138. Alfred Lansburgh, "Die Bank mit den 300 Millionen" in: Die Bank. Monatshefte für Finanz- und Bankwesen (Berlin, May 1914) pp. 415-426.

139. Jahrbuch der Berliner Börse 1914/1915. Ein Nachschlagebuch für Bankiers und Kapitalisten 36th edition (Berlin, Leipzig, Hamburg, 1914).

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emphasize that we cannot answer this question with the certainty we can in the case of the economic history of the United States or the United Kingdom. Virtually all shares on the Continent are in bearer form; Latin countries (and Holland and Belgium: Naamloze Vennootschap) call the public limited company a Société Anonyme, because its owners are nameless. Continental companies do not possess lists of shareholders comparable to Anglo-American share registries which would allow us to produce analyses similar to those which have been done for British investors in Latin America and British investors in railways.[140] None of the alternatives are very satisfactory. Richard Tilly has done an interesting analysis based on subscribers for shares in the capital increases of the Schaaffhausen'scher Bankverein in 1895 and 1899.[141] The material is flawed, however, because it overrepresents joint-stock banks and private bankers. The percentage distribution of the Cologne shareholders (Tilly does not produce comparable figures for shareholders outside Cologne; the percentages are my own calculations, based on Tilly's raw figures) by occupation during the capital increases of 1895 and 1899 and attending

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140. Charles Jones, "Who Invested in Argentina and Uruguay?" in: Business Archives. The Journal of the Business Archives Council (London, November 1982) New Series vol. 4, No. 4, pp. 1-23; Roderick Floud and Donald McCloskey, The Economic History of Britain since 1700, Volume 1: 1700-1860 (Cambridge, 1981) p. 233.

141. Richard Tilly, "Kapital und Kapitalisten des Schaaffhausen'schen Bankvereins, 1895-1899" in: Tilly, Kapital, Staat, und sozialer Protest in der deutschen Industrialisierung. Gesammelte Aufsätze (Göttingen, 1980) pp. 114-125. (= Kritische Studen zur Geschichtswissenschaft, vol. 41).

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the annual general meetings of those two years, follows:

Occupational Distribution of Cologne Shareholders of the Schaaffhausen'scher Bankverein (in %)

	1895		1899	
	Capital Increase %	AGM %	Capital Increase %	AGM %
Joint-stock Banks	30	16.8	56	17
Commercial firms	1.2	.08	3.4	0
Industrial firms	6.32	7.4	4	0.3
Private bankers	30	27.7	2	19.3
Merchants	1.1	4.9	12	14
Industrialists	6.5	39.2	2.7	42
Civil Servants etc.	4.53	0.94	3.5	.05
Rentiers	11	2.8	16	6.5

SOURCE: Based on Richard Tilly, "Kapital und Kapitalisten des Schaaffhausen'schen Bankvereins, 1895-1899" in: Tilly, Kapital, Staat, und sozialer Protest in der deutschen Industrialisierung. Gesammelte Aufsätze (Göttingen, 1980) p. 123 (=Kritische Studien zur Geschichtswissenschaft, vol. 41).

The problem with these statistics is that they appear to overstate the amount of capital supplied by the joint-stock banks. What seems to be happening is that the shareholders in the Schaaffhausen'scher Bankverein feel there is no need for them to go to the trouble of filling out the forms and delivering their shares to fulfil the technical formalities of a capital increase, when the back office clerks of their local joint-stock bank can do the job more than adequately. In the case of the annual general meeting, however, some shareholders care enough about the issues to show up in person. This particularly applies to the busy captains of industry, who are happy to have joint-stock banks subscribe on their behalf to the capital increase, but make time to show up at the annual general meeting because they have strong opinions about the industrial policy of the most

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important regional bank of Rhineland-Westphalia. The rentiers, by contrast, are more concerned about clipping coupons than about industrial policy, and so are less prominent at the AGM than in the capital increase. Because the joint-stock banks are so overrepresented, the statistics derived from the capital increase are somewhat inadequate. Funds were supplied to German industry not by the joint-stock banks, but rather by the nameless investors on whose behalf the joint-stock banks subscribed for the capital increase.

Lists of subscribers for capital increases are extremely rare; the two which Tilly uses are the only ones I know. More common but still very rare are the attendance lists of shareholders at annual general meetings (Präsenzlisten). I shall now analyze the occupations of the shareholders at the AGM of the Bochumer Verein für Bergbau und Gusstahlfabrikation in Bochum on 1 November 1854; the shareholders of the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb at the AGMs of 21 October 1871 and 30 October 1872; and the shareholders of the Braunschweig-Hannoversche Hypothekenbank at the AGM of 7 April 1873. The first two companies are integrated iron and steel companies of the Ruhr; the third company is a mortgage bank active in Lower Saxony.

Occupations of Shareholders at the AGM of the Bochumer Verein, 1 November 1854

Managers of the Bochumer Verein	25%
Other Industrialists	6%
Merchants	47%
Private Bankers	5%
Joint Stock Bankers	6.4%

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Lawyers	3.3%
Doctors	1%
Civil Servants	1%
Military	0.5%
Estate Owners	1.5%
Other	3%

SOURCE: Based on Walter Däbritz, Bochumer Verein für Bergbau und Gusstahlfabrikation in Bochum. Neun Jahrzehnte seiner Geschichte im Rahmen der Wirtschaft des Ruhrbezirks (Düsseldorf, 1934) pp. 60-62.

Occupations of Shareholders at the AGMs of the Phoenix, 21 October 1871 and 30 October 1872

	1871	1872
Managers of the Phoenix	29%	42%
Other Industrialists	17%	20%
Merchants	19%	11%
Private Bankers	15%	11%
Joint Stock Bankers	10%	7%
Lawyers	10%	9%

SOURCE: Präsenzlisten in Mannesmann-Archiv, Düsseldorf, Az. P1 25 51.

Occupations of Shareholders at the AGM of the Braunschweig-Hannoversche Hypothekenbank, 7 April 1873

Managers of the BHHB	11%
Other Joint Stock Bankers	12%
Private Bankers	24%
Industrialists	13%
Merchants	28%
Lawyers	11%
Civil Servants	1%

SOURCE: Niedersächsisches Staatsarchiv in Wolfenbüttel, Az. 12A Neu, Fb. 13, Nr. 45945.

A few words about the difficulties in compiling these figures will reveal how little trust is to be placed in them. The greatest difficulty is assigning the various businessmen to each category, which is not easy even when occupational descriptions are provided. The Phoenix descriptions seem the most reliable; they distinguish between Kaufmann (merchant), Fabrikant (manufacturer), and

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even Hüttenbesitzer (owner of an ironworks); the difficulties arise here with special cases, men who shifted between various professions. An example is Marie Hyacinthe Edouard Ophoven, who began as a lawyer, then worked for the predecessor of the Phoenix at Eschweiler, and ended his career as the cashier of the Phoenix at Ruhrort; in the 1871 list he is described as a Cassirer (cashier), but in 1872 as a Kaufmann.[142] Is this man a lawyer, financier, or an industralist? Clearly all three; I have included his shares (35 in 1871, 130 in 1872) under "Managers of the Phoenix". Another person I have assigned to that rubric is Franz Joseph Landvogt, although he is usually described as a rentier. I have described him as a manager of the Phoenix because Landvogt managed the Administration der Henrichshütte for a few years on behalf of the Disconto-Gesellschaft and had the technical ability to manage an ironworks; he was also a member of the powerful committee of four of the Phoenix administrative board which decided many of the questions of the day-to-day management of the Phoenix during these years.[143] I have assigned another member of the committee of four, the president of the Phoenix administrative board, Ernst Jeghers, to the rubric of managers as well; on the other hand, the other two members of the committee of four, Freiherr Abraham von Oppenheim, a

142. Seeling, Wallonische Industriepionere p. 138. Präsenzlisten for the AGMs of 21 October 1871 and 30 October 1872 in Mannesmann-Archiv, Düsseldorf Az. P1 25 51.

143. Phoenix, Administrative Board Meeting, Laar 18 February 1861 and Committee Meeting, Laar, 24 January 1870. Mannesmann-Archiv. Az. P1 25 37. 1.

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partner of the private bank Sal. Oppenheim jr. + Cie. of Cologne, and the lawyer Robert Esser II of Cologne have been calculated as private banker and lawyer respectively. Lawyers are important sources of investment funds for two reasons: first of all, in their professional capacity as legal advisors to companies and as managers of funds on behalf of estates, minors, and imbeciles; and secondly, as relatively wealthy professional men who had made enough money during the period of primitive capital accumulation to invest in industrial companies. Robert Esser II represents the first type, a corporate lawyer who is found on the boards of many Cologne companies, similar to his contemporary August Theodor Geppert I, and a forerunner of a type which reached its zenith in the figure of Maximilian Kempner, the brilliant corporate lawyer who was the architect of the potash cartel.[144] The other man I have described as a lawyer, the Kreisrichter (local magistrate) Friederich Schulte of Schwelm, presumably represents the second type. Another type of wealthy professional men who occasionally invested in industry were doctors: there are two such men among the shareholders of the Bochumer Verein, Dr. med. Hergersberg and Dr. med. A.M. Würzburger. Doctors did not dominate the German capital market the way the legendary Belgian dentists now dominate the Eurobond market, but they appear on Präsenzlisten and on supervisory boards with enough regularity that they may be described as another

144. Robert Steimel, Kölner Köpfe (Cologne, 1958) column 118; Mosse, Jews in the German Economy, p. 234.

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sector of primitive capital accumulation which was tapped by German industry. The most extreme example is Dr. med. Friedrich Wilhelm Müser, who switched from the medical profession to being a managing director of one of the Ruhr's major collieries, the Harpener Bergbau-Gesellschaft.[145] Another doctor who made a move into heavy industry was the liberal politician Dr. med. Wilhelm Löwe-Calbe, who sat on the supervisory board of the Bochumer Verein from 1872 until his death in 1886; but he became interested in heavy industry not primarily as an investor, but because he was the brother-in-law to the managing director of the Bochumer Verein, Louis Baare.[146]

Less trust can be placed in the occupational descriptions of the Präsenzliste of the Bochumer Verein. Gustav Mevissen is described as a Kaufmann; Theodor Movius as a Landgerichts-Assessor; and Wilhelm Ludwig Deichmann as a Commerzienrath. Since I know that all these men were directors of the Schaaffhausen'scher Bankverein in 1854, I have assigned their shareholdings to the rubric of "Joint-stock Banks". Dagobert Oppenheim is described as the president of the Rheinische Dampfschiffahrtgesellschaft, the leading steamship company on the Rhine; I have, however, assigned his shareholding to "Private Bankers" on the grounds that he was a partner in Sal. Oppenheim jr. +

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145. Gerhard Gebhardt, Ruhrbergbau. Geschichte, Aufbau und Verflechtung seiner Gesellschaften und Organisationen (Essen, 1957) pp. 306-307.

146. Däbritz, Bochumer Verein p. [457]; Hans-Ulrich Wehler, Bismarck und der Imperialismus (Cologne, 1969) p. 104.

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Cie. I have also decided that a newspaper publisher - Josef DuMont, the publisher of the Kölnische Zeitung and owner of a publishing company which still exists today - is an industrialist rather than a merchant.[147] But these occupational descriptions - accurate so far as they go, but often misleading - are preferable to the situation with the Braunschweig-Hannoversche Hypothekenbank, where no occupational descriptions (except those, like Regierungsrath, which are titles which automatically precede the name) are given and I have had to use personal knowledge to assign the shareholdings to the various categories. I have had difficult cases to decided in this instance as well: Hermann Wolff of Braunschweig, for example, who made most of his money from leasing the Brunswick state lottery I have described as a "private banker" because that is the nearest approximation of his role and because he worked closely with the Brunswick private bank Gebrüder Löbbecke.[148] Of the three companies I have analyzed, the most reliable results are therefore those for the Phoenix; the results for the Bochumer Verein are less reliable, and those for the Braunschweig-Hannoversche Hypothekenbank least trustworthy.

It is not only the untrustworthiness of the occupational descriptions which causes problems. An AGM is

147. Detmar Heinrich Sarnetzki, "Joseph DuMont" in: Neue Deutsche Biographie (Berlin, 1959) vol. 4, pp. 190-191.

148. Theodor Müller, Bilanz zweier Jahrhunderten: zur Geschichte des Bankhauses Gebrüder Löbbecke & Co. Braunschweig (Braunschweig, 1961) pp. 89-90.

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always only a minority of the shareholders, with a bias towards the larger shareholders and those who live near the headquarters of the company. There can be some surprising omissions. Adolph von Hansemann of the Disconto-Gesellschaft, for example, was extremely lax about attending administrative board meetings and annual general meetings of the Phoenix - totally reversing the intense involvement of the Disconto-Gesellschaft which prevailed from 1859 until his father's death in 1864. Although he was present at the Phoenix AGM of 21 October 1871 with 160 class "A" shares and 60 class "B" shares, he was not present at the 1872 AGM and was re-elected to the administrative board in his absence.[149] The absence of Adolph von Hansemann largely accounts for the drop in the "Joint-Stock Bank" figure. It is difficult to see if the Disconto-Gesellschaft shares were represented at all at the 1872 AGM. A logical representative of the Disconto-Gesellschaft would have been General-Consul Freiherr Albert von Oppenheim, because the ties between the Disconto-Gesellschaft and Sal. Oppenheim jr. + Cie. were very close: Hansemann's mother-in-law was an Oppenheim. Yet the number of shares represented by Albert von Oppenheim declined from 195 class "A" and 20 class "B" in 1871 to 126 class "A" and 10 class "B" in 1872. It is possible that the representation for these shares was given to Victor Wendelstadt, the director of the Schaaffhausen'scher Bankverein, who did increase the number

149. Präsenzlisten of AGMs of Phoenix of 21 October 1871 and 30 October 1872, Mannesmann-Archiv. Az, P1 25 21.

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of shares he represented; or they could have been given to Franz Joseph Landvogt, who had already worked closely with the Disconto-Gesellschaft at the Henrichshütte; or they may have been assigned to other Phoenix managers; or they may not have been represented at all.

Another dificulty which distorts Präsenzlisten is men who are not really investors in the company. There are no examples I notice in the above four lists, but one instance is the financial journalist George Davidsohn at the AGMs of the Rhine-Nahe Railway Company. Financial journals on the Continent in the nineteenth century combined many functions which we would consider conflicts of interest: they gave personal investment advice, they executed orders on the stock market, they managed investments, they even set up investment funds. The most notorious example of this was Jules Mirès' Journal des Chemins de Fer; but even Der Aktionär, a journal the probity of which I would rate highly today or at any time, gave personal advice, executed market orders, managed investments. One additional function which financial journalists took on was the role of shareholders' ginger groups in AGMs; before protection of the small investor was placed in the trustworthy hands of Otto Graf Lambsdorff, this role was often adopted by financial journalists. Thus George Davidsohn - the founder and editor of the Berliner Börsen-Courier, notable as one of the earliest champions of Richard Wagner - wrote to Gerson von Bleichröder, requesting that Bleichröder give him his Rhine-Nahe proxies, so that Davidsohn could take part in the AGM

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of the Rhine-Nahe Railway Company.[150]

The rubric "Other" for the Bochumer Verein AGM includes occupations which were too difficult to define: Max Greve, who is described as the mayor of Bochum, is quite possibly an important local merchant or industrialist, but further details are not known; two publicans (Wirt and Gastwirt) signed for forty shares between them; and another two men, E. Lentz (five shares) and and A. Achenbach (fifteen shares), who live in the artistic and industrial centre Düsseldorf are described as "painters" (Maler). Yet another painter turned up at the AGM of the Phoenix in 1870: Lambert Hastenrath of Aachen, with fifteen class "A".[151] One usually imagines painters living in garrets, not attending annual general meetings of shareholders; but no doubt the wealth of the Rhenish bourgeoisie did play some role in providing the leisure and the means to create the Düsseldorf artistic school. One of the most important directors of the Düsseldorf gallery came from a similar wealthy bourgeois family, although in this case a Hanseatic, not a Rhenish one: Carl Woermann.

Other possible methods of learning more about German investors are share registries of insurance companies, lists of Gewerken, and lists of supervisory board members. Insurance companies are the exceptions to the rule that

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150. Letters of George Davidsohn to Gerson von Bleichröder, Bleichröder Archiv, Box XXIII folder 6.

151. Däbritz, Bochumer Verein pp. 60-62; Präsenzliste of AGM of Phoenix of 25 October 1870, Mannesmann-Archiv, Az. P1 25 21.

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continental shares are in bearer form. Shares of German insurance companies are in registered form, so that the company can make a cash call if it is hit with unusually high claims; in the nineteenth century, insurance companis' shares were often 20% paid up, and the shareholder would give a note of hand for the remaining 80%. I am not aware, however, of any insurance company share registries which have survived. Gewerkschaften maintained lists of Gewerken because Kuxen have unlimited liability (see explanation above, p. 20), and some of these lists have survived. But Gewerken are by no means typical German investors; they are willing to risk unlimited liability and they usually live in mining districts so they can keep an eye on their investments and even intervene in the management. The best way of obtaining a general impression of investors in German companies remains the lists of supervisory board members, which should include all the major investors in a company. Even so, these boards seem unduly weighted towards bankers, and because of the separation between management and supervisory board this ignores the contribution of investment funds made by management - which, if my calculations above can be credited, was extremely substantial.

An analysis of the origins of German investors cannot be compiled with an accuracy similar to countries which have registered shares; but I shall now try to convey, in general terms, some of the sources for German capital investment.

One of the most important sources was the re-investment

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of profits. This could take many forms. Companies could re-invest their profits directly; or their shareholders or managers could re-invest large bonuses or large dividends in shares of the company - this seems to have happened at the Phoenix, as indicated by the large management shareholding. Lucky investors could also play va banque: re-invest profits made in one type of industrial share in other companies in the same industry. Thus Friedrich Grillo and Wilhelm von Born plunged the profits they had made from collieries back into the Ruhr coalmining industry. The early successes of the first railways in Germany favoured this: the first German railway, the königlich privilegirte Ludwigs-Eisenbahn-Gesellschaft (Nuremberg-Fürth) paid dividends averaging 17% over the years 1836-1888, and another early railway line, Magdeburg-Halberstadt, paid an average of nearly 12% during 1844-1864.[152] The experience of Stockton and Darlington was similar. Another method was using profits made in one sector to invest in another sector: this was done by the merchants (like the Godeffroys) and the textile manufacturers who used their profits from one line of business to invest in Ruhr heavy industry. But in addition, private investors who reaped a profit from one type of share would use these profits to invest in other shares. An example is the bonds issued by the United States to finance the Civil War. Sympathy for the Northern cause is alleged to have been very widespread, so these issues

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152. Offizieller Jubiläumsband der Deutschen Bundesbahn. 150 Jahre Deutsche Eisenbahn (Munich, 1985), p. 12, Mayer, Deutsche Eisenbahnen p. 305.

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seem to have had a "British Telecom effect": people bought bonds of the Union who would not otherwise have bought any security. The Hannover financier Adolph Berliner, one of the most perceptive commentators on the Gründerjahre, said that the boom would have been unthinkable if people had not made huge profits on American bonds which they had bought at the height of the Civil War, and then re-invested these profits in German industrial shares.[153]

Until Knut Borchardt's classic article of 1961, Germany was regarded as suffering from a capital shortage; Borchardt argued that this was a myth (see above, p. 93). Germany nevertheless had the problem that it could not finance its industrial regions with savings from agricultural regions. The "classic" (i.e., English) method of capital formation is for wealthy agricultural capital surplus areas to supply capital to rapidly industrializing areas. In England, the country banks either drew against or deposited surpluses with their city correspondents: the entire system then cleared through the development of a national marketplace in bills of exchange in the City of London. In Germany, this was not possible: the major agricultural hinterland, the German East, imported capital rather than exported it. Interest rates rose from west to east, and money often followed: in 1865 Baron Moritz von Cohn of Dessau, who was operating the savings bank of the duchy of Anhalt, was deprived of this concession because he was purchasing East

153. Adolph Berliner, Die wirthschaftliche Krisis, ihre Ursachen und ihre Entwicklung (Hannover, 1878) pp. 26-27.

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Prussian Pfandbriefe instead of re-investing the funds in the duchy. (A Pfandbrief - in French called a lettre à gage - is a type of mortgage security which was invented in Prussia under Frederick the Great, and exists in France and Germany but not in other countries. Originally they were issued by Landschaften, provincial assemblies of the Prussian nobility, later by mortgage banks as well. The lending institution would lend money against mortgages; it would then issue an equal amount of Pfandbriefe. The Pfandbriefe were secured by the unlimited liability of the Landschaft, or by the capital of the mortgage bank, as well as the underlying property. They soon became a favourite investment vehicle.) Baron Cohn was perfectly sensible, since he could earn 6% on Pfandbriefe issued by the Landschaft of East Prussia, as opposed to only 4% in the duchy of Anhalt. Similar complaints were voiced against the private bankers in the duchy of Brunswick.[154] Financial unification followed, it did not precede the political unification of Germany. Only after 1875, when the new Reichsbank began to set up branches in all the important provincial money centres, did interest rates begin to even out.[155]

Although there were some wealthy agricultural regions

154. Friedrich Wilhelm Hugo Ahlfeld, Entwicklung und Stand des Bankwesens in Anhalt Diss. Rostock 1927 pp. 79-80; Richard Mittendorf, "Die Entwicklung des Bankverkehrs in Braunschweig von der Mitte des 18. Jahrhunderts bis 1866" (Göttingen, jur Diss. 1920) pp. 24-27.

155. Paul Wallich, Konzentration pp. 112-13.

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in Germany, this wealth did not finance industry. There was a large middle class of well-off farmers in the Kingdom (after 1866, the Prussian province) of Hanover, yet their funds did not go into industry. Instead, they preferred to put their money into land, either directly, or indirectly through Pfandbriefe. The Hanover capital market had an insatiable appetite for Pfandbriefe. Not only did the premier private banker in Hanover, Max Jacob Frensdorff, sell Pfandbriefe of the Braunschweig-Hannoversche Hypothekenbank and the Preussische Central-Bodencredit-Actien-Gesellschaft, he sold Pfandbriefe issued by Swedish and Estonian mortgage institutions as well.[156] In the comparatively prosperous region of southwestern Germany, the Frankfurt capital market concentrated on government bonds and foreign, especially American and Austro-Hungarian, railway bonds, to the exclusion of domestic industrial ordinary shares.

There are only a few German regions where we can see capital surpluses from agriculture being used to finance industry: in Franconia, the thrifty farmers of Ansbach purchased the debt securities (Schuldscheinen) of the Königlich Bayerische Bank of Nuremberg (later the Bayerische Staatsbank), which then used these surpluses to finance such firms as the engineering enterprise of J.F. Klett, which became the Maschinenfabrik Augsburg-Nürnberg

156. Julius Blanck, Das Bank- und Börsenwesen in der Stadt Hannover (Hannover, ²1927) pp. 31-32.

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(M.A.N.).[157] In Brunswick, the Leihhaus (later the Braunschweigische Staatsbank) sold the farmers Schuldscheinen and invested the proceeds in the Brunswick state railways.[158] A similar process of the savings of thrifty farmers financing industrial growth seems to have happened in Württemberg. In both the Franconian and Brunsvician instances, the system rested on a state financial institution interposing itself between the farmers and the industrial enterprise. The farmers thought they were purchasing a government bond, when actually they were buying an industrial security; for the assets backing those Schuldscheinen were in fact industrial assets. Fortunately it turned out to be a harmless deception which was beneficial for all parties.

The best advice for a young industrialist who needed more capital was to marry a rich wife, preferably a daughter of an eminent local mercantile family. This was the advice which the Cologne merchant Friedrich Sölling constantly pressed upon his partner Alfred Krupp.[159] Hence the extremely complicated family trees and numerous intermarriages among the Rhenish bourgeoisie. The best known example of this is perhaps the Kölner Klüngel, or Cologne clique of eminent local families, including the

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157. Bayerische Staatsbank 1780-1930 pp. 90, 118, 136 note 4, 163.

158. Mittendorf, "Bankverkehr in Braunschweig" p. 63; Erich Achterberg, Braunschweigische Staatsbank. Zwei Jahrhunderte Zeitgeschichte (Braunschweig, [1965]) p. 84.

159. Joachim von Kürenberg, Krupp: Kampf um Stahl (Berlin, 1935) pp. 138, 180-181.

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families vom Rath, Deichmann, Camphausen, Rautenstrauch, Seydlitz, and Merkens. But there are similar family groups in Mannheim - where the Jordans, the Buhls of Deidesheim, the Bassermanns and the Jewish Ladenburgs

(intermarriage between Gentile notables and baptized Jewish families is remarkable, but not that rare: another example is the chain Oppenheim-von Kusserow-Hansemann) are all interrelated - in Duisburg, where the Böningers, Haniels and Carstanjens intermarried, in Elberfeld and Aachen. A Rhenish industrialist who needed more funds would first turn to his uncles, aunts, cousins and various in-laws. In the absence of a fully developed system for providing venture capital, these kinship groups provided a pseudo-market.

These families had made their money through what I call "primitive capital accumulation": namely, fortunes made before the full industrial revolution was ushered into Germany by the advent of the railways. Most characteristically, these fortunes were made in trade, although there are instances of men who made fortunes in earlier stages of the industrial revolution (notably textiles) investing in later stages, such as coalmining and ironmaking. There is also one notable instance of a man who had made his money in the professions moving into heavy industry: this is Dr. med. Friedrich Wilhelm Müser and the Harpener Bergbau-Actien-Gesellschaft, whom I have already mentioned.

There are numerous examples of men who had made their money as merchants becoming major industrial investors. The

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best example is perhaps Friedrich Grillo of Essen, who began as an iron trader, married into a wealthy family of merchants and bankers, the von Borns, and in the 1850's began investing in innumerable collieries, until he gave up his activity as an irontrader to become a full-time Gewerke.[160] The Böningers of Duisburg made their fortune in tobacco, but branched out into cotton spinning and into heavy industry and banking: the Niederrheinische Hütte, the Hohenzollern Gesellschaft für Locomotivbau, and the Duisburg-Ruhrorter Bank.[161] The Cologne family of the Rautenstrauchs made their fortune importing hides from the River Plate to Cologne, but members of the later generation which was active around 1873 let hide-trading take a second place to gambling on the stock market. Adolph Rautenstrauch and his relative Jacob von Kaufmann-Asser, the Cologne consul for the Republic of Paraguay, were inveterate speculators: a look through the journals of the Rautenstrauch firm reveals investments in over thirty different companies. The industrial companies included: the colliery Bergwerks-Gesellschaft Germania, the Emscher-Lippe Bohrgesellschaft and Kuxen of the potash mine "Neustassfurt"; iron and steel companies like the Phoenix and the Donnermarckshütte; engineering concerns like

160. Walther Däbritz, "Friedrich Grillo" in: Rheinisch-Westfälische Wirtschaftsbiographien (Münster/Westph., 1937) vol. 2 pp. 68-86.

161. Walter Ring, "Johann Gerhard Böninger... Conrad Arnold Böninger ... Carl Böninger" in: Rheinisch-Westfälische Wirtschaftsbiographien (Münster/Westphalia, 1937) vol. 2 pp. 180-197; Walter Ring, Geschichte der Duisburger Familie Böninger (Duisburg, 1930).

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Lauchhammer, the Maschinenbau-Actien-Gesellschaft Humboldt, and the Düsseldorfer Rohren- & Eisenwalzwerke; railways like the Northern Pacific Railroad, the Rhenish Railway, and the Cologne-Minden Railway; plus numerous oddities such as a brewery, the Cölnische Bierbrauerei, and shares of the race-course at Aachen.[162] No less gripped by the fever of speculation than the Rautenstrauchs were the Godeffroys. In the 1860's, the eminent Hamburg merchant house of J.C. Godeffroy & Co. began investing profits from their Samoa ventures (copra) in coal mines in the Ruhr, iron ore mines in the Harz, and steelworks at Osnabrück. They hoped they could increase their profits by investing more in the fast-growing Ruhr, instead of their traditional business, where profits were declining. The Rautenstrauchs seem to have had a similar motive. In the case of the Rautenstrauchs, the strategy was successful; the Godeffroys, on the other hand, suffered severely because of the depression in heavy industry which followed 1873, and the collapse of an iron ore concern, the Harzer Union (with which the Disconto-Gesellschaft was also involved) sealed the fate of the Hamburg house.[163]

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162. Hermann von Ham, "Johann Wilhelm Rautenstrauch" in: Rheinisch-Westfälische Wirtschaftsbiographien (Münster/Westphalia, 1937) vol. 2 pp. 217-237; Steimel, Kölner Köpfe column 334; Archive of W. Rautenstrauch & Co., Rheinisch-Westfälisches Wirtschaftsarchiv, Abteilung 9, Nr. 2, Faszikeln 15-16 (Journals R and S).

163. Kurt Schmack, J.C. Godeffroy & Sohn, Kaufleute zu Hamburg. Leistung und Schicksal eines Welthandelshauses (Hamburg, 1938) pp. 46-47, 54-55, 58-59, 82-83, 97, 108, 204-207, 239-243, 257-260; on the Harzer Union: Glagau, Börsenschwindel in Deutschland pp. 230, 528; Godeffroy to Bleichröder, 25 May 1879, 4 June 1879, 7 October 1879, 20

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Another source of funds for railways and heavy industry - besides commerce - was the textile industry, where some fortunes had been made before the advent of railways. The textile industrialist André Koechlin of Mulhouse in Alsace worked with Freiherr Abraham von Oppenheim in founding the Actien-Gesellschaft für Bergbau, Blei- und Zinkfabrikation zu Stolberg and in Westphalen, the Société des Glaces d'Aix-la-Chapelle, and the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb, all in 1853.[164]

One example is Gustav Mevissen and his in-laws Franz Damian Leiden and Franz Wilhelm Koenigs, who made their money in linen in Dülken. Mevissen eventually left the linen works to his in-laws and became president of the Rhenish Railway Company in 1844 and of the Schaaffhausen'scher Bankverein in 1848. He led his in-laws into numerous investments in the Rhenish heavy industry, including a colliery in the Ruhr, the Kölner Bergwerksverein, a Ruhr ironworks - the Hoerder Verein - and an iron ore mine in the Siegerland, the Köln-Müsener Bergwerksverein. David Hansemann and Adolph Hansemann, who first made their money in the Rhenish textile industry and then went on to become bankers and investors in railways and heavy industry are another example. Banks and bourse are the beating heart of any economy, taking money from where it

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October 1879, Bleichröder Archive, Box XXXIV folder 7.

164. Cameron, France and Economic Development, pp. 111, 379-381, 390-393, 399; Hermann Schäfer, "André Koechlin" in: Neue Deutsche Biographie (Berlin, 1980) vol. 12 pp. 291-293.

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is in surplus and lending it out again to where it is most needed. To a certain extent the Disconto-Gesellschaft performed the function of transferring the profits made by the textile industry to railways and heavy industry, which were hungry for capital. To my knowledge there is only one instance of an investment by the Disconto-Gesellschaft in the textile industry, and this is its formation of the Louisenthaler Actien-Gesellschaft für Drückerei, Weberei, und Spinnerei of Mülheim/Ruhr.[165] There are at least three recognizable textile industrialists on the board of the Disconto-Gesellschaft: Meyer Samuel Baswitz, who had a store for Silesian woollen goods and was chairman of the Berlin Jewish burial society, Moritz Reichenheim (also Jewish), of the firm of N. Reichenheim & Söhne who had a textile mill at Wüstegiersdorf in Silesia, and Commerzienrath Ludwig Seyffardt of Crefeld, who sat on the board of the Actien-Gesellschaft für Seidenzwirnerei zu Crefeld.[166] There are presumably more, but they are not readily identifiable.

A very important source of funds for industrialists was private bankers. A separation of merchants from private bankers is to some extent artificial, since nearly all

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165. Gesetz-Sammlung für die Königlich Preussischen Staaten, 1857 (Berlin, [1857]) pp. 1-16.

166. Allgemeiner Wohnungs-Anzeiger nebst Adress- und Geschäftshandbuch für Berlin, dessen Umgebung und Charlottenburg auf das Jahr 1857. Aus amtlichen Quellen zwammengetragen (Berlin, 1857) p. 18; Address-Kalender für die Königliche Haupt- und Residenzstädte Berlin und Potsdam auf das Jahr 1870 (Berlin [1870]) vol. 156 p. 512; Ernst G. Lowenthal, Juden in Preussen. Biographisches Verzeichnis. Ein repräsentativer Querschnitt (Berlin, 1981) pp. 115, 787; Mosse, Jews in the German Economy pp. 41-42; Preussische Gesetz-Sammlung 1857 pp. 141-158.

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private bankers began as merchants, and often engaged in commerce and banking simultaneously for several years. One of the most fruitful trades for new bankers was that of Spediteur: a transport and conveyance enterprise. The transition to the profession of banking was especially convenient for Spediteuren, partly because they were already involved in advancing money against goods in transport, partly because their business was being lost to the railways. An example is the Aachen private bank Charlier & Scheibler which began as a transport and conveyance enterprise; in 1872 the banking section became the Aachener Disconto-Gesellschaft, the transport section became the Speditions- und Lagerhaus Aachen AG, the "Spelag", in 1898. The Aachener Disconto-Gesellschaft changed its name to the Rheinische Disconto-Gesellschaft in 1902 and to the Rheinische-Westfälische Disconto-Gesellschaft in 1905 and became the largest provincial bank in the Rhineland before it was absorbed by the Dresdner Bank in 1917. The industrial connections of the Charliers and the Scheiblers included the Vereinigungsgesellschaft für Steinkohlenbergbau im Wurmrevier. This was one of the oldest German coalmining companies, founded in 1836 (antedating the earliest Ruhr coalmining company by four years), which merged into the Eschweiler Bergwerksverein in 1907; Leopold Scheibler served as its president. His brother-in-law, (Franz) Albert Charlier went into partnership with the coach builder Ferdinand van der Zypen of Liège in 1845 and set up the coach factory of van der

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Zypen & Charlier at Deutz. The company at first built machinery and steam boilers as well as coaches, but as the railways of the Rhineland neared completion the company concentrated on railway coaches exclusively. In 1928 the Deutz coach factory became part of the Vereinigte Westdeutsche Waggonfabriken AG.[167]

Extremely numerous are the merchants who became bankers. The Berlin wine merchant Friedrich Wilhelm Krause went through a similar development to the Rautenstrauchs: he engaged in so many speculations that he finally formally acknowledged his new profession by converting his wine house into a bank.[168] The Cologne grain trader, Jacob Löb Eltzbacher successfully shifted from grain trading to serious investment banking in 1869.[169] The tobacco trading

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167. Wilhelm Eltester, "Die Geschichtliche Entwicklung des Aachener Bankwesens vom Beginn des 19. Jahrhundert bis zur Gegenwart" (Aachen, 1948) pp. 28-30 in: StA Aachen, Az. HS 998; Friedrich Bremen, Aachener Disconto-Gesellschaft. Rheinische Disconto-Gesellschaft, Rheinisch-Westfälische Disconto-Gesellschaft. Eine Bank in Aachen in der Zeit zwischen 1872 und 1917. Ein Beitrag zur Wirtschaftsgeschichte des Aachener Raumes Diss. Fachhochschule Aachen 1978 in: Stadtarchiv. Aachen, Az. CA 57; Albert Charlier, "Franz Albert Charlier" in: Neue Deutsche Biographie vol. 3, p. 193.

168. Annemarie Lange, Berlin zur Zeit Bebels und Bismarcks (East Berlin, 1959) p. 93; Hans Fürstenberg, Carl Fürstenberg. Die Lebensgeschichte eines deutschen Bankiers 1870-1914 (Berlin, 1931) pp. 36, 144-145.

169. Alfred Krüger, Das Kölner Bankiergewerbe vom Ende des 18. Jahrhunderts bis 1875 (Essen, 1925) pp. 154, 184-187 (= Veröffentlichungen des Archivs für Rheinische-Westfälische Wirtschaftsgeschichte, Rheinisch-Westfälisches Wirtschaftsarchiv in Köln) vol. 10); Klara van Eyll, "Kölner Banken im 19. Jahrhundert und ihr Einfluss auf die Industrialisierung in der Rheinprovinz" in: Mitteilungen der Industrie- und Handelskammer zu Köln (1973) p. 278.

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family, the Böningers of Duisburg, founded a private bank (Theodor Böninger Söhne) which, after a short involvement with the Provinzial-Disconto-Gesellschaft in 1871-1874, became the Duisburg-Ruhrorter Bank: a regional bank which had an importance beyond its size because it was the house bank of the Haniel family.[170] Not infrequently, the old trade and the new bank continued to operate side-by-side: this was the case at Charlier & Scheibler until 1872, and the banking house of Gebrüder Wolff in Bernburg continued to have a sideline making reed filters for sugar refineries into the 1920's.[171]

These private bankers, and equally so, the private bankers whose shift from commerce to finance lay much further in the past, were very significant providers of funds to infant German industry. Alfred Krüger and Richard Tilly have written good accounts about the forward-looking Rhenish private bankers who financed the industry on the Rhine and Ruhr, such as Oppenheim, Herstatt, Schaaffhausen, Seydlitz & Merkens and Eltzbacher.

A private bank which is comparatively neglected is Jacob Landau of Berlin. Originally from Breslau, Jacob Landau occupied a position there similar to Oppenheim in Cologne or Bleichröder in Berlin. Around 1870 he moved the chief ofice of his bank to Berlin, but kept the branch in Breslau; he retained his Silesian clientele, and many of his

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170. Ring, Familie Böninger, p. 380; Riesser, Konzentration pp. 552, 602.

171. Ahlfeld, Bankwesen in Anhalt, p. 150.

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ventures were linked to that province: he was, with Bleichröder, one of the founders of the Vereinigte Königs- und Laurahütte in 1871, and his clients included the Silesian magnate the Duke of Ratibor, the brother of Chlodwig Hohenlohe.

The bank's most brilliant industrial achievement was the formation of the Deutsche Edison-Gesellschaft für angewandte Electricität, the forerunner of the A.E.G., which by 1913 had grown to be the largest German electrical company and also the largest German industrial company (in terms of market capitalization). This interest arose from the close connection between Ludwig von Kaufmann and Emil Rathenau.Ludwig von Kaufmann was the son of Jacob von Kaufmann-Asser of Cologne; he married Landau's daughter and became a partner in the bank. Kaufmann extended Rathenau the money to form a company to study the Edison patents; on 19 April 1883 the Landau bank, the Nationalbank für Deutschland, Gebr. Sulzbach of Frankfurt/Main and the Breslauer Disconto-Bank formed the Deutsche Edison-Gesellschaft. In May 1887 this company changed its name to the Allgemeine Electricitäts-Gesellschaft, the A.E.G. On the board of the A.E.G. sat Hugo Landau and Ludwig von Kaufmann, and among its bankers were Jacob Landau and the Nationalbank für Deutschland. After this early start was made possible by the Jewish private bankers Jacob Landau and Gebr. Sulzbach, the Deutsche Bank and the Berliner Handels-Gesellschaft took a more active role in financing Rathenau's electric trust. Werner Mosse has put the contribution of

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Sulzbach and Landau in perspective:

> It is interesting to speculate what would have happened had the Landaus and Sulzbachs not invested modestly in the projects of the suspect failed entrepreneur. Would Rathenau have been able to raise the means himself? Would he have found other sponsors? Or is it possible that there might have been no A.E.G.?[172]

I think the answer is that Rathenau would have found other sponsors by going and knocking on the doors of more Jewish private bankers until he found someone willing to invest in his enterprise; but if Rathenau attempted to do the same thing in the 1950's for example, when most of these private bankers had disappeared, there would have been no A.E.G.

The banking house Jacob Landau was a remarkable "small, but powerful private bank" (to use the phrase originally applied to the Prussian Conservatives: die klein, aber mächtige Partei); in spite of its comparatively small size, it was able to retain its control over the much larger Nationalbank für Deutschland, including the chairmanship of that bank's supervisory board. It was able to do this through its Gründerrechte (founders' rights) whereby it could purchase a large block of shares pro rata with its subscription to the original capital at below market prices. The Nationalbank für Deutschland was founded in 1881 as part of a chain of banks (including the Austrian Länderbank) set up by the fraudulent Union Générale of Eugène Bontoux; but

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172. Mosse, Jews in German Economy, pp. 244-245; Fürstenberg, Lebensgeschichte pp. 173, 181-182; Karl Helfferich, Georg von Siemens. Ein Lebensbild; Deutsche Bank 1870-1970 (Frankfurt/Main, 1970) pp. 120-122, 126; Bernhard, Meister und Dilettanten pp. 143-147.

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it and the Länderbank left the sinking ship before Bontoux collapsed in January 1882.

The Landau bank ran into trouble in the 1890's, due to overly speculative investments in branch railways through the Allgemeine deutsche Kleinbahngesellschaft. Otto Jeidels says that the problem with this branch railway company - as opposed to those of Friedrich Lenz and Hermann Bachstein - was that it was essentially a financial venture designed to produce investment banking deals for the Landaus, rather than a company with an industrial ethos. The problems of these branch railways led to the absorption of the private bank Jacob Landau by the Nationalbank für Deutschland in 1898 and the Breslauer Disconto-Bank (another bank under Landau influence) by the Bank für Handel und Industrie in 1901. In 1901 the Landau partner left the Nationalbank's board, and the control of the Landaus over the larger bank was broken.[173]

But the activity of the Landau family as major leaders in German business by no means ended in 1901. Their influence was henceforth exercized through one of their oldest allies, the Commerz- und Disconto-Bank. In the 1920's, Eugen Landau served as the vice-chairman of the Commerz- und Privat-Bank (the name of the Commerz- und Disconto-Bank from 1920), as chairman of the Schultheiss-Patzenhofer Brauerei AG and the Oberschlesische Eisenbahnbedarfs-AG, and as board member of the A.E.G., the

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173. Korach, Deutsche Privatbankgeschäft, pp. 65-66; Jeidels, Grossbanken und Industrie, pp. 133, 190, 228-229.

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Linke-Hoffmann group, and the Rütgerswerke. His stepson, Curt Sobernheim, served as director of the Commerz-und Privat-Bank from 1911 until the bank ran into difficulties during the Depression and he had to resign.[174]

The story of the Landau family is in some respects the most remarkable story in the history of German finance. It combines dubious transactions (the association with Eugène Bontoux) with brilliant and lasting entrepreneurial achievements (A.E.G, Vereinigte Königs- und Laurahütte); setbacks in 1882 and 1898 followed by remarkable recoveries; and most astonishing, a comparatively small private bank exercizing influence and control over numerous joint-stock banks, such as the Commerz- und Disconto-Bank, the Breslauer Disconto-Bank and the Nationalbank für Deutschland. The diminishing role for the private banker which is a theme of this period did not affect the Landaus; not only did they survive, they enhanced their position.

The great contribution of private bankers to German industrialization is the risk capital they provided, often for firms which were technically very advanced. Werner Mosse describes as another Jewish bank prepared to provide risk capital Born und Busse, which provided the funds for the establishment of Ludwig Loewe & Co., Kommandit-Gesellschaft auf Aktien für Fabrikation von Nähmaschinen in 1870. this enterprise became the core of a huge concern, which eventually included munitions, gunpowder, guns, machinery and machine tools, electricals (the Union Electricitäts-

174. Mosse, Jews in German Economy, pp. 344-345.

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Gesellschaft) and cable companies.[175] Another private bank which helped a major company in the electrical industry to its feet was the Frankfurt (gentile) private bank Georg Hauck & Sohn, which still exists: it financed Brown, Boveri & Cie. This is now the third largest electrical company in Germany: it has recently been taken over by the Swedish electrical firm ASEA. Georg Hauck & Sohn also financed one of the major German chemical companies, the Hoechster Farbwerke vormals Meister, Lucius, und Brüning.[176] In fact, the German chemical industry seems to owe its early financing more to the private banks than to the joint-stock banks: the Badische Anilin- und Soda-Fabrik was supplied with funds by the Jewish private bank W.H. Ladenburg & Söhne of Mannheim.[177] The only major German chemical company which owes its origin to a joint-stock bank is Schering AG, originally founded as the Chemische Fabrik auf Aktien vormals Emil Schering, which was founded by the Vereinsbank Quistorp & Co., which collapsed in 1873; and it would be stretching a point to describe Heinrich Quistorp's Vereinsbank as joint-stock universal bank, since in many respects, such as its nepotism and its corporate form (it was a Kommanditgesellschaft auf Aktien) it was closer to private

175. Mosse, Jews in German Economy, pp. 137-143; Jeidels, Grossbanken und Industrie, pp. 243-250.

176. Erich Achterberg, Frankfurter Bankherren (Frankfurt/Main, ²1971) pp. 82-83.

177. Rudolf Haas, Die Entwicklung des Bankwesens im Deutschen Oberrheingebiet. Zur 100 Wiederkehr des Gründungstags der Rheinische Creditbank Mannheim am 15 Juni 1970 (Mannheim, [1970]) pp. 27-29.

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banks than to joint-stock banks.[178]

Joint-stock banks did supply funds for Germany's industrial development, but contrasted with other sources such as private bankers or foreign investment it was not as significant as one might expect. I shall touch on this only briefly here, since this is the theme of the rest of the thesis. In the Ruhr, the most active joint-stock banks were the Schaaffhausen'scher Bankverein of Cologne and (from 1872) the Essener Credit-Anstalt. In what I regard as the critical period for finance for Ruhr industry, namely the period 1848-1873, the Schaaffhausen'scher Bankverein financed the Kölner Bergwerksverein, the Hoerder Verein, and the Bochumer Verein für Bergbau und Gusstahlfabrikation; the Berliner Handels-Gesellschaft financed the ironworks Neuschottland, the collieries "Hibernia" and "Shamrock" of Mulvany plus another Mulvany ventury, the Prussian Mining and Ironworks Company; the Disconto-Gesellschaft financed the Henrichshütte, the Phoenix, and the mine "Vereinigte Präsident". Nearly all these ventures obtained funds from a variety of sources and might have done perfectly well without joint-stock banks: the initial finance for what became the Hoerder Verein, when it was still the ironworks of Hermann Piepenstock, came from the private bank of Abraham Schaaffhausen; one of Mulvany's most important backers was Gerson Bleichröder, who at this point dominated the Berliner Handels-Gesellschaft (he was chairman of the supervisory board) the way the Landaus would later dominate

178. Lange, Berlin, Bismarck, Bebel pp. 106-107, 153.

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the Nationalbank für Deutschland; and Sal. Oppenheim jr. + Cie. was the most important banker of the Phoenix from 1852 until 1920, except for the short if important period of Disconto-Gesellschaft hegemony in 1859-1864. In addition, for many of these companies the most important source of funds was foreign investment: this was true of "Hibernia", "Shamrock", the Prussian Mining and Ironworks Company, the Kölner Bergwerksverein and the Phoenix (although not of Neuschottland, in spite of its name, which was called that because its blackband formations resembled those of the Scottish iron districts).

I would explain the greater success of private banks in providing risk capital in a number of ways. First of all private banks had the advantage of nepotism: they were closely linked to the kinship structures which were so important for industrialists who needed to raise capital. Secondly, joint-stock banks became very bureaucratic very early: we shall see below how bureaucratically managed the Disconto-Gesellschaft was (see pp. 202-206). Private bankers also enjoyed the advantage of being autocrats: they could take greater risks because they never had to face the shareholders. Admittedly many joint-stock banks found it easy enough to conceal problems, but some joint-stock managers felt that they were in a position of semi-trusteeship vis-à-vis their shareholders, and this imposed caution. Modest capital bases also prevented private bankers from throwing good money after bad in a way comparable to the Disconto-Gesellschaft and the Dortmunder

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Union. A private banker who had a venture turn out badly could not continue to pay for mistakes for years, as the Disconto-Gesellschaft did; he either carried out a quick and successful reorganization, delivered a coup-de-grâce, or went bankrupt himself. The last option was by no means unusual: Jos. Jaques, one of the most prestigious Berlin private banks, had the misfortune to be Strousberg's most loyal backer and suspended in October 1875, when the railway king himself was arrested in Russia.[179] Finally, the multiplicity of private bankers was an important element: it was important for Alfred Krupp that he could keep on knocking on doors until he found one opened by a private banker who believed in him, like Wilhelm Ludwig Deichmann and Alexander Meyer-Cohn. The saga of Krupp and his bankers will be discussed below.

In the German banking world of the nineteenth century, the superior ability of the private banker at ferreting out new business was acknowledged through an informal division of labour: the private banker would discover the new venture, and when it grew beyond his resources he would introduce it to his joint-stock friends. Each joint-stock bank was often surrounded by some private bank "pilot fish": Bleichröder and the Berliner Handels-Gesellschaft; Oppenheim, Ladenburg and the Disconto-Gesellschaft; Landau and the Nationalbank für Deutschland, the Breslauer Disconto-Bank, and the Commerz- und Disconto-Bank.

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179. "Frankfurter Börse (25 bis 30 Okt.)" in: Aktionär (Frankfurt/Main, Sunday, 31 October 1875) vol. 22 No. 1140 p. 759.

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Sometimes these discoveries enjoyed a legendary success, as when Landau and Gebrüder Sulzbach introduced the Nationalbank für Deutschland, the Deutsche Bank, and the Berliner Handels-Gesellschaft to what would become the A.E.G. or when the Ladenburgs introduced the Disconto-Gesellschaft to B.A.S.F.; at other times the discoveries turned out less fortunately, as when Freiherr Albert von Oppenheim discovered the Austrian engineer Victor Popp and persuaded the Disconto-Gesellschaft and the Norddeutsche Bank to invest in Popp's Internationale Druckluft- und Electricitäts-Gesellschaft.[180]

Finally, we come to what was often the most important source of finance for Ruhr industry during the critical decades of the eighteen-fifties and eighteen-sixties: foreign investment. The first joint-stock company in the Ruhr, the Gesellschaft der Hardenbergischen Kohlenwerke of 1840, was established by French investors from Valenciennes and Anzin.[181] Britain is famous for its numerous foreign investments in the nineteenth century: nearly every continent has some railways built by the men of London's "engineering quarter", located on Great George and Victoria streets. Often foreign investment was attracted to a region because of existing trade patterns: this was true of German investments in the River Plate (the Rhenish hide trade) and

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180. Schinckel, Erinnerungen pp. 237-238.

181. Gebhardt, Ruhrbergbau, pp. 15-16; Cameron, France and Economic Development, p. 373.

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Brazil (the Hamburg coffee trade).[182] For Britain in the 1860's, the most important region of Germany was the province of Prussia, which provided Britain with much of her grain: the longest consular reports published in the parliamentary papers were those from the British consuls in Memel, Tilsit, Königsberg and Danzig. This trading relationship interested some British capitalists in investing in railways in the province of Prussia, and they chose Dr. Bethel Henry Strousberg to execute these projects. British investment was essential for the various Strousberg railways (see above, pp. 69-72), especially the early ones, such as Tilsit-Insterburg, the East Prussian Southern Railway (Pillau-Königsberg-Lyck), and Berlin-Görlitz. After this early start Strousberg diversified his sources of funds so that they were the most comprehensive and hence least typical of any industrialist. He raised funds from private bankers, joint-stock banks, mortgage banks; government banks (the Prussian Seehandlung); he tapped numerous foreign investors, even borrowing money from Russian banks to the horror of that country's government, which felt that Russia should import capital to build railways there, not export capital so that Strousberg could build railways in France; he sold shares to and borrowed money from his clients, his suppliers, his contractors, even his workers; he sold shares to courtiers, noblemen, professors, journalists,

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182. Ham, "Rautenstrauch" in: RWWB vol. 2 pp. 217-237; Siegfried Zimmermann, Theodor Wille 1844-1969 (Hamburg, 1969) (=Wirtschaftsgeschichtliche Forschungsstelle e.V., Hamburg, Veröffentlichungen, vol. 32).

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industrialists, bankers,small savers, even sections of the working classes, to judge from a comment in the socialist newspaper Volksstaat;[183] most of all, he borrowed, entering transactions not because they made industrial sense but rather because they produced commercial paper which he could then discount; last but by no means least, he raised the art of paying in 180 days to a new peak. It would oversimplify matters to describe Strousberg merely as an industrialist who raised funds through foreign investment; but foreign investment gave Strousberg his start, and even in his darkest days he saw his salvation in tapping the English money market, making repeated and hurried trips to London.

A more conventional railway contractor, William D. Sharpe, built the Unstrut Valley Railway from Artern to Naumburg.[184] British investors also put their money into the horse-drawn tramways of Leipzig.[185] But this investment was by no means confined to railways. The Vereinsbank in Hamburg was established - as the name implies - by the Union

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183. Lange, Berlin, Bismarck, Bebel, p. 95.

184. "Bericht der Spezialkommission zur Untersuchung des Eisenbahnkonzessionswesens" (the Lasker Committee) in: SBHA, Leg. Per. 12, Session 1 (1873/74) Anlagen, vol. 1 pp. 100-102.

185. The Directory of Directors 1881. A list of the Directors of the Joint-Stock Companies of the United Kingdom, and the Companies in which they are concerned, with such other particulars as are considered likely to be of use and interest,by Thomas Skinner (London, February 1881) p. 310; Arthur Liebmann, Acht Jahrzehnte im Dienste der Wirtschaft. Ein Lebensbild der Allgemeine deutsche Credit-Anstalt (Leipzig, 1938) p. 84.

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Bank of London Limited.[186] The Irish public works official William Thomas Mulvany began a second career as a Ruhr coal magnate, sinking the mines "Hibernia", "Shamrock", "Hansa", "Zollern", and "Erin". The financial backers of his company were Irish, Anglo-Irish, not British (Mulvany himself was born into a Catholic family which converted to Anglicanism), although one of the most important backers, Michael Corr-van der Maeren was an Irishman who had moved to Belgium, and the technical operations of the mines were carried out by a William Coulson of Durham.[187] The Imperial and Continental Gas Association was the first company to provide gas-lighting in Germany.[188] The English investment which I find most extraordinary, however, is the co-operation of English capital with the armour plate manufacturer Hermann Gruson to establish the Norddeutsche Schiffbau-AG of Kiel in 1867; this company was established to build armoured ships for the infant German navy.[189] Since Krupp obtained finance at this same period from the French Banque Seillière,[190] we

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186. Hundert Jahre Vereinsbank in Hamburg 1856-1956 [Hamburg, 1956] pp. 28-29.

187. Kurt Bloemers, William Thomas Mulvany (1806-1885). Ein Beitrag zur Geschichte der rheinisch-westfälischen Grossindustrie und der deutsch-englischen Wirtschaftsbeziehungen im 19. Jahrhundert (Essen, 1922) pp. 61-63 (=Veröffentlichungen des Archivs für Rheinisch-Westfälische Wirtschaftsgeschichte (Rheinisch-Westfälisches Wirtschaftsarchiv) vol. 8).

188. Geldern, Oechelhäuser p. 8

189. "Prospekt: Norddeutsche Schiffbau Aktien-Gesellschaft, Kiel" in: Aktionär (Frankfurt/Main, Sunday, 7 July 1867) vol. 14 No. 706, p. 485.

190. Wilhelm Berdrow, Alfred Krupp (Berlin, 1927) vol. 2, p. 89; Cameron, France and Economic Development, pp. 396-397.

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have the peculiar situation that French capital helped equip the German arms industry, and the German naval dockyards are in part a creation of British capital. The importance of British capital for the Ruhr can be gauged by the attitude of Der Aktionär, the leading German financial weekly. In 1865 Der Aktionär cited as an example of the extent to which the Ruhr had recovered from the slump of 1857-1860 the fact that "once again English capitalists are turning their active attention to the Westphalian iron industry." (The occasion was Mulvany's involvement with the Dortmunder Hütte.)[191]

Dutch investment also moved into the Ruhr, investing in the Steinhauser Hütte and the collieries "Holland" and "Gelria".[192] As one might expect, Dutch finance, entrepreneurs and sailors were very important in developing the Rhenish shipping industry.[193] But the British, Irish, and Dutch contributions pale in comparison with French and Belgian investment. The names of the coal panels which were to become the colliery "Dahlbusch" reflected the origin of their owners; "König Leopold" and "Königin von England". British capital, however, withdrew from "Dahlbusch", which remained almost totally under Belgian control (with caesurae

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191. "Rheinisch-Westfälische Briefe No. 320" in: Aktionär (Frankfurt/Main, Sunday, 29 January 1865) vol. 12, No. 579, p. 53.

192. Preussische Gesetz-Sammlung 1858 pp. 413-428; H.P.G. Quack, Herinneringen uit de Levensjaren (Amsterdam, 1915) pp. 92-95; Bloemers, Mulvany pp. 57-58.

193. Information from Dr H.A.Wessel, archivist of the Mannesmann-Werke.

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in 1914-1918 and 1940-1945) until the 1960's.[194] The largest iron and steel company in Germany in the 1850's, the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb, has been described by a contemporary as a completely Belgian enterprise, which conducted all its correspondence in French.[195] If British capital invested in Germany because of existing trade flows and because of Britain's technological lead, French and Belgian capitalists were obeying the dictates of geology as they followed eastward the coal seams which stretch from Dover to Dortmund. French investment was also very important in non-ferrous metals. There is much to be said for the argument that Germany and France form two halves of a complementary economic system and this is particularly evident in the case of non-ferrous metals - the glass industry is an example - but France is realtively poor in deposits of these metals. Germany, on the other hand, was in the nineteenth century the world's largest producer of zinc, in the top two or three for lead, and in the top three or four for copper. Thus we find French investment in the Actien-Gesellschaft für Bergbau, Blei- und Zinkfabrikation zu Stolberg und in Westphalen (which in the 1850's was the largest lead producer in Europe); the French-backed company Vielle Montagne of Liège dominated the European zinc market including Europe's largest zinc producer, Germany; there are numerous instances

194. Wilhelm Kesten, Geschichte der Bergwerkgesellschaft Dahlbusch (Essen, 1952).

195. Franz Joseph Collin, Vom Meiler zum Grossraum-Koksofen. Erinnerungen [Dortmund, 1934] pp. [6]-[7].

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of direct French investment in lead mines at Commern in the Eifel and in zinc mines at Bergisch-Gladbach; there was also direct French investment in the Silesian zinc industry.[196]

Foreign investment in the Ruhr was crucial not only for the capital it provided but also because it was accompanied by new technology. Mulvany's mine agent from Durham, William Coulson, introduced the practice of tubbing out the sides of mine-shafts; the Belgian Joseph Chaudron perfected the Kind-Chaudron sinking process while sinking the mine "Dahlbusch"; and another Belgian, Charles Detillieux, the General Director of the Phoenix, was certainly the second man in the Ruhr, and quite likely the first, to produce pig iron by means of a coke-fired blast-furnace.[197]

If I may sum up my picture of the German capital market in the critical period 1848-1873: an industrialist would first re-invest profits and tap the funds of his relatives; these relatives might lead him to (or be themselves) men who had made fortunes during the period of primitive capital accumulation, such as merchants, Spediteuren or cloth

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196. Cameron, France and Economic Development, pp. 375-387; Fanny Imle, Der Bleibergbau von Mechernich in der Voreifel. Eine wirtschafts- und sozialpolitische Studie (Jena, 1909) pp. 29, 60. The information about the zinc industry around Bergisch Gladbach is derived from the superb unpublished history of Dr. Armin Rosenbaum, "Sammlung von Wissenswertem über die 'Berzelius' Metallhütten-Gesellschaft m.b.H. Duisburg-Wanheim", 14 August 1952 p. 16, consulted in the archive of Berzelius GmbH, Duisburg-Wanheim.

197. Bloemers, Mulvany, p. 63; Kesten, Dahlbusch, pp. 68-69; Cameron, France and Economic Development, p. 389. Hans Seeling has written numerous articles about Belgian influence in German industrial development; he has now synthesized his researches as: Hans Seeling, Wallonische Industrie-Pioniere in Deutschland. Historische Reflektionen (Liège, 1983).

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manufacturers; then the industrialist would tap the capital market by knocking on enough doors until he found a private banker who would believe in him; when the company outgrew the private banker's resources, the private banker would in turn tap joint-stock banks or foreign investors. After 1871, foreign investment from France and elsewhere did not withdraw - "Dahlbusch", for example, remained in Belgian hands until the nineteen-sixties - but its proportion of German investment dropped rapidly, as the hyperactive joint-stock banks of the Gründerjahre moved into the Ruhr. Finally, when the German banking industry embarked upon a phase of rapid concentration after 1897 the private banks were rapidly absorbed, destroyed by war, inflation, or depression, aryanized or closed down by the Soviet occupiers so that the multiplicity of private banks of the nineteenth century disappeared, the German financial market became dominated by the three monoliths of the Deutsche Bank, the Dresdner Bank and the Commerzbank, and industrialists experienced difficulty bridging the "Macmillan gap" (as it is called in Britain: the gap between the initial grub-stake and a full stock market listing). Sir Robert Ensor has described this process very well when he has said of the amalgamation process in England that it "gradually blunted the spear-point of individualist initiative, which had hitherto opened the new ways for England."[198]

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198. Sir Robert C.K.Ensor, England 1870-1914 (Oxford, 1936) p. 114 (=George Clark, ed., The Oxford History of England, vol. 14).

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II. The Direction der Disconto-Gesellschaft: Origins, Growth, Internal Structure and Relationship with other Banks

A. The Origins of the Disconto-Gesellschaft

The Depression of the 1840's was one of the most severe in European history. In the earlier part of the decade, a potato blight created famine conditions which reached their most extreme expression in Ireland and in the revolt of the Silesian linen weavers. In 1847, the railway mania ended in a panic in both England and Germany, and a commercial crisis was overlaid on the existing agricultural depression. When the Revolution of 1848 erupted in Paris in February, the fear of revolution on top of weak economic conditions led many commercial houses to suspend payment. Chief of these in Germany was the private bank of Abraham Schaaffhausen in Cologne, which suspended in the last days of March 1848. In Belgium, however, a notable measure was taken to stanch the panic: under the patronage of King Leopold, a co-operative credit society, the Union de Crédit, was called into being in Brussels. This was the immediate model for the Berlin Disconto-Gesellschaft.

The original plan was ideally calculated to appeal to the two strongest impulses in David Hansemann's nature: charity and profit. Perhaps every creative entrepreneur needs a belief in a higher mission, a feeling that he is doing more than "merely" making money. In Hansemann this feeling was highly developed; perhaps he received it from his mother, whose last will and testament combines religious

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and financial imagery in a remarkable fashion:

> "I would dearly love to will something to my beloved son David Hansemann; but my poor things would be of no use to him; so let his good child-like heart accept my blessing for him and his descendants as an invisible capital, which has been deposited for him in a better world and upon which the interest will be paid from above."[199]

This combination of charitable plus profitable impulses comes out equally strongly in the fire insurance company which Hansemann founded in 1825 in Aachen: the Aachener und Münchener Feuerversicherungsgesellschaft, which today is one of Germany's largest financial conglomerates. This company was required to allocate half its profits to charity; the other half went to its shareholders. Many insurance pioneers felt uncomfortable with the profits of joint-stock insurance companies, and preferred the mutual form; Hansemann, with characteristic brilliance, was able to reconcile the profitable and the eleemosynary. Until 1875 the Aachener und Münchener Feuerversicherungsgesellschaft supported the Aachener Verein zur Beförderung der Arbeitsamkeit (the Aachen Association for the Encouragement of Industriousness). The Aachener Verein encouraged industriousness through savings plans, and until its assets melted away during the inflation in 1923, it was the second largest savings bank in Germany after the Berlin savings bank.[200]

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199. Alexander Bergengruen, David Hansemann (Berlin, 1901) p. 44.

200. Bergengruen, David Hansemann pp. 55-74, Wilhelm Eltester, "Die geschichtliche Entwicklung des Aachener Bankwesens vom Beginn des 19. Jahrhundert bis zur Gegenwart" (Aachen, 1948) pp. 4, 12-13 in Stadtarchiv Aachen, Az. Hs 998.

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A credit union, like the Brussels Union de Crédit and the Disconto-Gesellschaft, is a savings co-operative. Its customers are its owners. A credit union can often pay higher dividends than an ordinary bank because it knows more about the people to whom it lends; it has less risk. The Brussels Union de Crédit paid dividends at the rate of over 9%. Its charitable and co-operative structure made it more profitable: which had great appeal for David Hansemann. For a while Hansemann was pursuing the same idea as the great advocate of working-men's credit co-operatives: Hermann Schulze-Delitzsch. In fact when Schulze-Delitzsch set up his own central bank for his co-operatives in 1864, the Deutsche Genossenschaftsbank von Soergel, Parisius & Co., he modelled it upon the early Disconto-Gesellschaft. But Schulze-Delitzsch was a social reformer; Hansemann an entrepreneur. While Schulze-Delitzsch stayed with his working-men's co-operatives and people's banks (Volksbanken), and Friedrich Wilhelm Raiffeisen later brought the idea of agricultural credit co-operatives to the countryside, Hansemann developed the Disconto-Gesellschaft into something quite different.[201]

It was also particularly characteristic of David Hansemann that he should choose to imitate a Belgian innovation. David Hansemann was born near Hamburg, but he

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201. Walther Däbritz, Gründung und Anfänge der Disconto-Gesellschaft, Berlin. Ein Beitrag zur Bank- und Wirtschaftsgeschichte Deutschlands in den Jahren 1850 bis 1875 (Munich and Leipzig, 1931) pp. 7, 10-16; Karl Erich Born, Geld und Banken im 19. und 20. Jahrhundert (Stuttgart, 1977) p. 220 (=Kröners Taschenausgabe vol. 428).

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made his career in Aachen, close to the Belgian frontier. He was also an investor in a textile firm in Eupen, which was later managed by his sons Adolph and Gustav; a true border town, which is now in Belgium. Like other Rhinelanders, David Hansemann was always quick to look to Germany's western neighbour. After all, until 1900 the Rhineland shared a common legal system with France and Belgium (the Code Napoléon); it did not share a common legal system with Berlin. The Rhenish Railway, Hansemann's pet project, would have been impossible without finance from the Belgian government. Hansemann also wanted Belgium to join the Zollverein, and Belgium did apply; the application, however, was rejected on the grounds that only German states could become members.[202] (Luxembourg, which has a more uncertain nationality, was a member of the Zollverein until 1918.) Up until and including 1848, Belgium was also the ideal political model for German liberals; the Prussian constitution of 1848, which Hansemann helped to draft, was modelled on the Belgian constitution. The oneness of this heartland of Westphalia, Rhineland, Belgium and Northern France, was expressed most eloquently by Maximilian Harden in 1923:

> "Between Ostende and Hamm, the Pas-de-Calais and Dortmund lie in the valleys of the rivers Schelde, Meuse, Rhine and Ruhr Europe's richest possessions in coal and ore, the most productive mines, the most modern foundries, steelworks, machine factories, railway nets and waterways. If this area is brought together rationally as the economic unity to which it is foreordained, without regard for the political borders that

202. Bergengruen, David Hansemann, pp. 133, 163-164, 214-218.

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> dynastic rivalry and diplomatic wastefulness have arbitrarily drawn, then it can help France and Germany through the aftermath of the war and become the source from which will flow the strength to heal our continent.[203]

Unfortunately Harden's vision was only realized after another war, with the creation of Benelux, the European Coal and Steel Community, and ultimately the European Economic Community; and one possible explanation of the E.E.C.'s troubles today is the economic decline of this unified region, which despite its troubles is still an essential piece of the economic fabric of Western Europe. I have discussed the France/Belgium/Rhineland-Westphalia connection at some length because it is so vital, and because it will be a recurring theme in the enterprises of the Disconto-Gesellschaft.

There was a third impulse behind David Hansemann's interest in a credit union for small businessmen. If there was one thing the leading financiers of 1850 did not want to occur, it was a repetition of the misery of the 1840's and the panic of 1848. David Hansemann, then Prussian Finance Minister, had been instrumental in stemming that panic through the conversion of the Cologne private bank, Abraham Schaaffhausen, into one of the first Prussian public limited companies engaged in banking, and through his creation of Darlehenskassen - special discounting offices to tide Prussia over the financial emergency and subsequently re-

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203. Maximilian Harden, Deutschland, Frankreich, England (Berlin, 1923) p. 109; Harry F. Young, Maximilian Harden, Censor Germaniae (The Hague, 1959) pp. 232-233.

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erected during the Prussian mobilizations of 1859, 1864, 1866, 1870, and 1914. Hansemann was very concerned about the shortage of credit for small businessmen. The Disconto-Gesellschaft, as he originally envisioned it, was to be a state-sponsored credit institution (as the Darlehenskassen had been and as the Schaaffhausen'scher Bankverein was) so as to avert a repetition of the panic of 1848. When he exchanged his post as Finance Minister for that as head of the Bank of Prussia, David Hansemann at once began to make preparations to set up this new institution. On 26 June 1850 the first general meeting of the "Berliner Kreditgesellschaft" met in the conference room of the Bank of Prussia; a clear indication of the institution's semi-official status.[204]

Hansemann had hoped that this association would be granted a legal personality as a public joint-stock company (Offene Handels-Gesellschaft, OHG). Its members would still have unlimited liability. He also hoped that, as a state-sponsored institution, it could count on favourable terms for discounting its paper at the Bank of Prussia. Yet as the Revolution of 1848 faded into the past, so did Hansemann's political fortunes. Hansemann was the furthest to the left of that remarkable constellation of Rhenish businessmen who rose to prominence in 1848: Gustav Mevissen, Hermann von Beckerath, Ludolf Camphausen, Freiherr August von der Heydt and Freiherr Abraham von Oppenheim, to list the others roughly from left to right. The leading lights of the

204. Bergengruen, David Hansemann pp. 662-663.

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reaction looked upon Hansemann with disfavour and suspicion, and the more the threat of revolution receded the more dispensable Hansemann became. Chief of Hansemann's opponents was August von der Heydt: always the most conservative of the Rhenish liberal businessmen, he had crossed over to the reaction with flags flying. Von der Heydt, now Minister of Trade, the Finance Minister von Raabe, and the Oberpräsident (governor of a Prussian province) of the Mark Brandenburg, Eduard Flottwell, bitterly opposed a project which they saw as designed to increase Hansemann's popularity.[205] Von der Heydt had yet another axe to grind. As I have mentioned before, as a former partner of the private bank von der Heydt-Kersten & Söhne of Elberfeld, he had no desire to foster a new institution which would break the financial monopoly of the private bankers.[206]

If the government had retained David Hansemann as head of the Bank of Prussia, Hansemann would have had to give up his plan. But the reaction deepened, and at the beginning of April 1851 he was dismissed from the Bank of Prussia. Loth to become inactive now, Hansemann decided to go ahead with his plan for a credit union, but this time as a purely

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205. Bergengruen, David Hansemann, pp. 664-666; Däbritz, Disconto-Gesellschaft, pp. 10-11.

206. This is the major point of Helmut Böhme, "Gründung und Anfänge des Schaaffhausen'schen Bankvereins, der Bank des Berliner Kassenvereins, der Direktion der Disconto-Gesellschaft und der Bank für Handel und Industrie. Ein Beitrag zur preussischen Bankpolitik von 1848-1853" in: Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie (Munich, 1966) vol. 10 pp. 189-212 and vol. 11, pp. 34-56.

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private joint-stock company; it would not be a society with legal personality, but neither would it be dependent upon government approval. A meeting of the Berliner Kreditgesellschaft, the embryonic credit union, voted unanimously on 2 June 1851 to reject the government's requirements for incorporation and proceed with Hansemann's new plan. The new articles of association dated from 6 June 1851, and they were written with the proviso that they would become effective only if no more satisfactory response was forthcoming from the government by 15 September. The government stood fast, and on 15 October 1851 the new company began business.[207]

The new company was essentially a private partnership with active partners - for the time being limited to David Hansemann - plus silent partners with limited liability who were also the customers of the firm. Hansemann defined the firm's co-operative character when he said that "A member of the company is a shareholder and a customer at the same time." Only the active partners were to represent the firm outwardly, so the company's formal name was the "Direction der Disconto-Gesellschaft". The silent partnership is the crudest method of limiting liability; in theory, if the company goes bankrupt the creditors will be unable to press their claims against partners whose names they do not know. The early Disconto-Gesellschaft had no legal personality apart from its Direction, which consisted of David Hansemann. The organs of the company were the directorate

207. Bergengruen, David Hansemann, pp. 666-667.

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(Direction), consisting of the active partners (Geschaftsinhaber) with the deciding voice and managers (Geschäftsführer) with only an advisory voice, the administrative board (Verwaltungsrath) which represented the silent partners, and the general meeting, in which only those who had invested a thousand thalers or more could vote. Members had to pay up 10% of their investment initially, and could borrow up to the full amount. To be admitted a prospective member needed the approval of the directorate, the administrative board, and a special admissions committee. The silent partnerships were as a rule not transferable, since they were based upon personal confidence, although exceptions were envisioned for cases of inheritance. The profits were to be divided as follows: the active partners got 5% off the top, then the members got 4% as their ordinary dividend. Of what remained, 1/10 was to be put into a reserve fund, and of the remaining 9/10 one-quarter was to go to the active partners, three quarters to the members as an extra dividend.[208]

A membership list for the Disconto-Gesellschaft shows a remarkable variety of occupations. In addition to merchants and factory-owners, there are numerous handicraftsmen: masons, carpenters, glaziers, shoemakers, tailors, milliners, glove-makers, bakers, brewers, butchers, printers, typesetters, gold-smiths, carpet-makers and one hairdresser. Yet the Disconto-Gesellschaft soon laboured

208. Däbritz, Disconto-Gesellschaft, pp. 10-16. The first statute of the Disconto-Gesellschaft and its Gesellschaftsvertrag are in the RWWA, Az. 92 Gd.

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under the disadvantage that its members did not borrow enough from it. Half of the members of the Brussels Union de Crédit took out loans there, but less than 40% did so at the Disconto-Gesellschaft. The Disconto-Gesellschaft had difficulty acquiring new assets for its loan portfolio, and its growth was hindered. As a result it began to make less of its money from its regular operations, and more under the heading marked "other". In addition the memberships changed hands frequently, making the Disconto-Gesellschaft's capital base uncertain. Hansemann took steps to solve these problems. As early as 1852, he raised the maximum amount of a share to 20,000 thalers, so as to attract a wealthier and hence steadier clientele. He persuaded the general meeting of 20 December 1852 to introduce the "fully-paid share"; previously members could only pay in 10% of their share. This was a success, as many members chose to take advantage of the opportunity and fully pay up their shares. Finally, on 19 April 1854 David Hansemann convinced the general meeting to allow the admission of Kommanditären (a special form of silent partner) with a fully paid up minimum capital of 50,000 thalers. With this Hansemann broke out of the hitherto co-operative character of the Disconto-Gesellschaft.[209]

B. The Introduction of Crédit Mobilier Banking to Germany

I have already discussed the spread of the Crédit Mobilier idea throughout Europe. In Germany there were two men with direct connections to the Saint-Simonian milieu of

209. Däbritz, Disconto-Gesellschaft, pp. 17-19.

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Paris who were inspired by the idea of the Crédit Mobilier: Gustav Mevissen and Freiherr Abraham von Oppenheim. Mevissen read Saint-Simon extensively in his youth and came into contact with his disciples during a Paris stay in 1838. In 1848 Hansemann entrusted Mevissen with the reconstruction of the A. Schaaffhausen'scher Bankverein AG and thus Mevissen gained the chance to put his ideas into practice. Oppenheim's link to the Saint-Simonians was more material. The Oppenheims followed a policy of strategic marriages. They were related to many of the most important banking families of Europe: the Beyfus of Frankfurt, the Kaskels of Dresden, the Heines of Hamburg, the von Habers of Carlsruhe, the Bischoffsheims of Brussels, the Simons of Konigsberg and even (after 1860) the Hansemanns of Berlin. The link to the Saint-Simonians in this case consisted of Abraham Oppenheim's sister, who was married to the banker Benoît Fould of Paris, the financier and founder (with the Pereire brothers) of the Crédit Mobilier.[210]

Mevissen intended to develop the A. Schaaffhausen'scher Bankverein AG into a universal bank, and when the Crédit Mobilier was established in 1852 he at once acknowledged the intellectual affinity. Mevissen himself declared that the purpose of a bank was to be "the regulator of all economic activity". But various constraints crippled Mevissen's plans. Although the activity of the Schaaffhausen'scher

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210. Däbritz, Disconto-Gesellshaft, pp. 31-38; Alfred Krüger, Das Kölner Bankiergewerbe vom Ende des 18 Jahrhunderts bis 1875 (Essen, 1925) p. 68 and note (=Veröffentlichungen des Archivs für Rheinisch-Westfälische Wirtschaftsgeschichte (Rheinisch-Westfälisches Wirtschaftsarchiv in Köln) Vol. 10).

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Bankverein was limited to the Rhineland, its capital was already insufficient for its purposes. Because the bank was carrying on the business of an old house, much of its capital was already committed to normal banking activities, such as discounting bills, and was not available to provide long-term finance to industry. In addition, since the victory of the reaction in Prussia and the rise to power of the private banker von der Heydt, Mevissen could no longer hope for further co-operation from the Prussian government, his largest shareholder, in extending the scope of the Cologne bank.[211]

Since Mevissen could not accomplish his programme through the existing Schaaffhausen'scher Bankverein, he decided he would found a new bank which would carry out this programme; and since he could not establish such a bank in Prussia, he decided to set it up "offshore", in the Grand Duchy of Hesse-Darmstadt. Just as the Crédit Mobilier had been a blow against the power of the Paris Rothschilds, so this new bank was a blow against the power of the Frankfurt Rothschilds, for Hesse-Darmstadt lay right outside the gates of the Free City. In 1853 the Crédit Mobilier, the Schaaffhausen'scher Bankverein, and Sal. Oppenheim jr. + Cie. founded the Bank für Handel und Industrie in Darmstadt (often referred to as the Darmstädter Bank). Without the help of the Crédit Mobilier in placing the shares on the Paris bourse the new bank would never have survived its

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211. Däbritz, Disconto-Gesellschaft, pp. 41-43; Joseph Hansen, Gustav von Mevissen. Ein rheinisches Lebensbild 1815-1899 (Berlin, 1906) vol. 1. p. 645.

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first difficult years. The capital was 25 million gulden (50 million marks), of which 10 million gulden (20 million marks) were to be issued at once. Oppenheim and Mevissen offered the post of director of the bank to David Hansemann. Hansemann would have accepted if he had found someone to take his place, or at least deputize for him, at the Disconto-Gesellschaft. But of the two men he felt were suited to replace him, his son Adolph did not want to leave his flourishing textile factory in Eupen for an uncertain future at the fledgling Berlin bank, and Hansemann's old political friend Carl Mathy was busy as a partner in Bassermann's publishing house in Mannheim. Hansemann had evidently already formed his low opinion of his brother-in-law Hermann Weise, for he did not come into consideration. Hansemann regretfully had to refuse, for the remuneration they offered was very handsome: a salary of 30,000 gulden, plus a tantième (bonus) of 5%. Lazarus Hess, who had previously been an employee of the Crédit Mobilier, became the first director of the Bank für Handel und Industrie.[212]

The Darmstädter Bank had hoped to be able to open branches on Prussian soil. But the Prussian government always refused its permission. Numerous proposals were put to the Prussian government for new Crédit Mobilier banks which would have the form of Actiengesellschaften. These proposals were also rejected. Thus what German Crédit Mobilier banks were established before the introduction of

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212. Bergengruen, David Hansemann, p. 670; Däbritz, Disconto-Gesellschaft, pp. 41-45; Rondo E. Cameron, "Die Gründung der Darmstädter Bank" in: Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie (Munich, February 1957) vol. 2, N. 1, pp 104-111.

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free incorporation in June 1870 were either founded outside of Prussia, in one of Germany's numerous "duodecimo principalities", or through taking advantage of the legal loophole of the Kommanditgesellschaft auf Aktien. I shall discuss the Kommanditgesellschaft auf Aktien at length in the next section. Examples of the "offshore" banks, mostly founded in the boom year of 1856, include the Internationale Banque à Luxembourg (which still remains an important offshore bank, although in a different legal environment), the Mitteldeutsche Credit-Bank in Meiningen, the Dessauer Credit-Anstalt, and the Niedersächsische Bank in Bückeburg, to name only a few.[213]

Threatened by imminent competition on the one hand, and stagnating business on the other, the time had come for Hansemann to meet the challenge. He first moved to expand the bank's fields of activity. At the general meeting of 28 April 1855 he had Article 22 of the statute amended. This article regulated the use of funds which were not used to discount bills of the Disconto-Gesellschaft's members. Hitherto these funds could only be invested in bills from non-members or applied to maintain useful commercial connections and run the bill discounting business. All other operations were excluded. Hansemann amended the article to allow advances against stocks (bonds), shares, and similar securities, and that "all larger commercial

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213. Däbritz, Disconto-Gesellschaft, pp. 45-49; Rondo E. Cameron, France and the Economic Development of Europe 1800-1914: Conquests of Peace and Seeds of War (Princeton, 1961) pp. 160-161.

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connections" could be entered into which one regarded as "safe and profitable". With this amendment the whole world of company flotations and other new issues was opened to the Disconto-Gesellschaft. Only immobile property (real estate) was excluded. But in a further revision on 13 November 1856 it was stated that this embargo did not apply to mines or industrial establishments; that investments could be made in immobile property if the property could be quickly resold; and even if this was not the case, under "exceptionally favourable circumstances" an exception could be made. With these amendments David Hansemann obtained a completely free hand and the Disconto-Gesellschaft became a Crédit Mobilier, a universal bank.[214]

C. A New Corporate Form: the Kommandit-Gesellschaft auf Aktien.

The second step Hansemann took was to obtain the resources to carry out this ambitious programme. On 28 April 1855 he increased the maximum membership to 500,000 thalers. But this alone did not suffice. Finally, in December 1855 Hansemann laid before the public a plan he had worked out with the Berlin legal expert, Justizrath August Theodor Geppert I, and his old companion from the 1848 liberal movement, Carl Mathy. Permission to form a proper public limited company (Actien-Gesellschaft; Société Anonyme) was clearly not forthcoming from the government. There is, however, another Continental corporate form which has no true equivalent in Anglo-Saxon corporate law. This is

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214. Bergengruen, David Hansemann, p. 674; Däbritz, Disconto-Gesellschaft, pp. 51-52.

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the Société en Commandite or Kommandit-gesellschaft (abbreviated KG). This is essentially a partnership, with silent partners (Kommanditären) and active ones (Komplementären). Unlike the Anglo-Saxon partnership, however, which has no legal identity apart from the persons of its partners, a Société en Commandite is a Societas and has a legal personality of its own. This question, however, has always been a grey legal area. There is a school of thought in German law which holds that the existence of a Kommanditgesellschaft is bound up with the persons of its partners, and if all the partners die at once (say in a train crash), the Kommanditgesellschaft dies too. This close association between the existence of a Kommanditgesellschaft and the persons of its partners can be seen in the names of many such companies, which include the names of their partners in their formal corporate titles: the Barmer Bankverein von Hinsberg, Fischer & Co., the Halle'scher Bank-Verein von Kulisch, Kaempf & Co. These legal technicalities imply a unity between the interests of a Kommanditgesellschaft and those of its partners which resembles the Anglo-Saxon practice.

In France, the existence of the Société en Commandite was recognized in the Napoleonic Code de Commerce, including a variant upon the simple form, the Société en Commandite par Actions, which had transferable shares for the limited partners, plus an active partner (Gérant or Geschäftsinhaber) who had unlimited liability. The breakthrough for this corporate form came in 1832 when the

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French courts ruled lawful making these shares out to bearer, which made them eligible for listing on the Paris bourse. This meant French businessmen could take advantage of a corporate form which had shares with limited liability, yet which did not require government permission. Between 1826 and 1848 nearly three thousand Sociétés en Commandite were formed in France, almost ten times the number of Sociétés Anonymes which were formed in the same period. In 1856, however, the French government introduced restrictions governing the formation of Sociétés en Commandite, and formations dropped off. French laws of 1863 and 1867 introduced the free formation of Sociétés Anonymes, which brought to an end the heyday of the Société en Commandite par Actions.[215]

At the same time as the Société en Commandite par Actions was approaching the end of its useful life in France, David Hansemann prepared to introduce it to Germany, where the boom in Kommanditgesellschaften auf Aktien would last from 1856 until the free formation of Actiengesellschaften was introduced in 1870. Prussian law acknowledged the existence of the Kommanditgesellschaft, but regulated it in only two paragraphs. The first paragraph said that a person who entrusted his capital to this Societas not against fixed interest but who only

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215. Cameron, France and Economic Development pp. 33-35; Leland Hamilton Jenks, The Migration of British Capital to 1875 (London, [1927]) p. 395 note 4; Zwei Generationen im deutschen Bankwesen 1833-1914: Hermann Wallich, Aus meinem Leben. Paul Wallich, Lehr- und Wanderjahre eines Bankiers (Frankfurt/Main, 1978) p. 392.

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participated in the profits and losses, in proportion to his invested capital, was to be known as a silent partner. The second said that if his name was not included in the title of the company and he was not expressly acknowledged as a partner, he would be liable to the company's creditors only to the amount of his capital held by the company.[216]

Hansemann, Mathy, and Geppert decided to use this corporate form to fulfill their purposes. The Disconto-Gesellschaft general meeting of 9 January 1856 agreed to issue a Kommanditkapital (a capital of Commandites) to the amount of 10 million thalers (30 million marks), in the form of fully paid shares of 200 thalers (600 marks) each. Both the holders of the Kommanditkapital and the previous silent partners would be first off entitled to a 4% ordinary dividend. If the profits allowed payment of an extra dividend above that, the Kommanditären would be entitled to an extra 1%. The liability of the previous members of the Disconto-Gesellschaft was altered. The Kommanditkapital was liable for the debts of the company, the active partners (the Geschäftsinhaber) retained their unlimited liability, but the Mitbetheiligte - "co-partners", as the original members of the Disconto-Gesellschaft were now called, were henceforth only liable for obligations which arose from business with them, the Spezialgeschäft or special business. Hansemann summed up this principle as "Separate losses, common profits." As it happened, the special

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216. Jenks, Migration of British Capital, p. 395 note 4; Däbritz, Disconto-Gesellschaft p. 55.

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business steadily dwindled in importance. Some of its participants were wiped out by the panic of 1857. Others prospered so much that they could graduate to being full current account customers of the bank. Adolph Hansemann maintained the special business out of a sense of piety to his father, but it was closed down when the new law on public limited companies of 1884 required it to be discontinued.[217]

Far more lasting was the new corporate form which Hansemann created: the Kommanditgesellschaft auf Aktien (abbreviated KGaA). As the biographer of David Hansemann, Alexander Bergengruen, has observed, "with one foot he stood within the law, whilst with the other he stepped beyond it, yet without violating it in any way." With a feeling of impotence Hansemann's antagonist von der Heydt came to the conclusion that there was nothing he could do about it. Hansemann believed that when necessary one should innovate new legal forms and the law would follow; thus the law and the state avoided the danger of stagnation. Hansemann's innovation was endorsed by the experts assembled in Nuremberg in 1856 to create a uniform German commercial code: they classified the Kommanditgesellschaft auf Aktien as a sub-type of the Kommanditgesellschaft in the German commercial code promulgated in March 1861.[218]

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217. Bergenruen, David Hansemann pp. 674-676; Däbritz, Disconto-Gesellschaft, p. 53.

218. Bergengruen, David Hansemann, pp. 668-669; Däbritz, Disconto-Gesellschaft pp. 56-57; Böhme, "Gründung und Anfänge", vol. 11 p. 49.

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The Kommanditgesellschaft auf Aktien can be described as a halfway house on Germany's road to full capitalist forms, a cross between a partnership and a public limited company. In theory, it is the ideal corporate form. It can raise capital just as easily as a proper public limited company can; the small investor can participate in the firm's profits, yet has limited liability, as is the case with a public limited company; yet in case of bankruptcy, those most responsible for the firm's collapse have unlimited liability and should suffer the most. A drawback is that the shareholders are largely disenfranchised: the active partners, the Geschäftsinhaber, have the final say and co-opt each other, whereas the shareholders elect an administrative or supervisory board with only limited oversight powers. In practice, however, this is not that different from public limited companies, where the small shareholder also has little or no say.

The absolute power of the active partners of KGaA was one of the reasons why Jacob Goldschmidt, in the process of merging the Bank für Handel und Industrie and the Nationalbank für Deutschland in 1923, arranged for the new hybrid bank to have the corporate form of the Kommanditgesellschaft auf Aktien. Goldschmidt was also fond of this legal device because two of the oldest and most prestigious Berlin banks, the Berliner Handels-Gesellschaft and the Disconto-Gesellschaft, had this corporate form. The great power which the partners of a KGaA enjoy enabled Adolph von Hansemann to rule the Disconto-Gesellschaft as

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his private fiefdom. The disenfranchisement of the shareholders of a Kommanditgesellschaft auf Aktien makes the KGaA almost impregnable against takeovers. In 1923, for example, the stock exchange speculator Emil Ciprut assembled a packet of 35% of the shares of the Berliner Handels-Gesellschaft which he sold to Hugo Stinnes. When Hugo Stinnes tried to extend his control to the Berliner Handels-Gesellschaft, its leading partner, Carl Fürstenberg, informed Stinnes that the shareholders of a KGaA had no legal right to interfere in the dispositions of the partners. Stinnes at once became vastly more co-operative.[219] This strong defence against takeovers may be either a good or a bad thing, depending on one's views about takeovers.

The extraordinary powers granted to the partners of a Kommanditgesellschaft auf Aktien has often proven fatal to companies which adopt this corporate form. A remarkable number of German bank collapses have affected Kommanditgesellschaften auf Aktien. The Vereinsbank Quistorp, which collapsed in 1873, was a Kommanditgesellschaft auf Aktien; so was the Vereinsbank Sternberg, which collapsed in the 1890's; so was the Darmstädter-Nationalbank, when it collapsed on that day of evil omen, 13 July 1931; so was the Cologne bank J.D. Herstatt, when it collapsed due to foreign exchange speculations in 1974. A near collapse which is also worthy

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219. Hans Fürstenberg, Erinnerungen, Mein Weg als Bankier und Carl Fürstenbergs Altersjahre (Wiesbaden, 1965) pp. 143-144, 163-164.

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of mention is the Berliner Handels-Gesellschaft, which almost went under due to a partner's disastrous speculations in Russian roubles in 1883[220] - an interesting parallel to the collapse of Herstatt. Most curiously, I know of no specific instance where the unlimited liability of the active partners of the bankrupt institutions was called upon; perhaps the creditors (or the government, in the cases of the Darmstädter-Nationalbank and Herstatt) considered a lawsuit to enforce this liability would cost more time and money than it would be worth. So I know of no instance where this corporate form has lived up to its promise.

The extensive powers granted to the partners at times seem to have nurtured more entrepreneurial, yet responsible partners, just as partners in old Wall Street brokerage houses used to be more risk-taking and entrepreneurial than the armies of vice-presidents in the commercial banks. The Berliner Handels-Gesellschaft survived the banking crisis of the thirties better than its rivals thanks to the skills of its managing partners, Carl Fürstenberg and Otto Jeidels. Otto Jeidels, in particular, in 1927 broke off a valuable commercial connection with a progressive textile firm, the Norddeutsche Wollkämmerei of Bremen. In 1931 Nordwolle collapsed, and it brought down the Darmstädter-Nationalbank with it.[221] The reputation of the partners of the Disconto-Gesellschaft of the 1920's is not particularly high; yet

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220. Die Berliner Handels-Gesellschaft in einem Jahrhundert deutscher Wirtschaft 1856-1956 [Berlin, 1956] pp. 56-57.

221. Berliner Handels-Gesellschaft 1856-1956 pp. 69, 211-212, 224-230; Born, Geld und Banken pp. 499-500.

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after the Disconto-Gesellschaft merged with the Deutsche Bank in October 1929, the partners of the smaller Disconto-Gesellschaft ended up dominating the management of the much larger Deutsche Bank. The more forceful personalities of the KGaA partners engineered a "reverse takeover" of the much larger AG.

Another hallmark of the Kommanditgesellschaft auf Aktien is nepotism. This is not necessarily a disadvantage, because family companies (e.g. Matsushita Electric) display a remarkable dynamism which enables them to continue to flourish even in the present highly developed Western and Japanese capitalist economies. Partnerships have an inherent bias towards nepotism, because the need to buy out a partnership when a partner dies can often result in the liquidation of a company. The company will be financially better off if the partner's son, no matter how incompetent, steps into his father's shoes. Illiquidity after the death of a partner has proven to be a weakness of the Kommanditgesellschaft auf Aktien; after Adolph von Hansemann died in 1903 without leaving a son to succeed him, the liquidation of his partnership hobbled the Disconto-Gesellschaft during a critical period, and was possibly one of the reasons for the Disconto-Gesellschaft's further decline vis-à-vis the Deutsche Bank. The Disconto-Gesellschaft was rife with nepotism. David Hansemann and Adolph von Hansemann, father and son, were absolute rulers of the bank from 1851 to 1903. Hermann Weise, David Hansemann's Sippschwager (a Rhenish expression for men who

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marry sisters; David Hansemann and Hermann Weise had married the Fremery sisters), was one of the first Procurists. (A Procurist is a German legal term, signifying someone who is entitled to sign on behalf of a company, but who is not a full director or partner.) Adolph von Hansemann's brother Gustav Hansemann continued his career as a textile industrialist in Eupen, and occasionally represented the Disconto-Gesellschaft on the boards of various companies in the Rhineland, such as the Bergisch Märkische Bank in Elberfeld. Two distant relatives of David Hansemann served as directors of provincial banks which were associated with the Berlin Disconto-Gesellschaft: Carl Senff, who became the autocratic director of the Aachener Disconto-Gesellschaft, and Gerhard Sachau, a director of the Allgemeine deutsche Credit-Anstalt in Leipzig.[222]

The other major family dynasty in the Disconto-Gesellschaft was the Jewish family of the Salomonsohns, which was involved for longer than the Hansemanns were. Moritz Salomonsohn, a Jewish banker from Inowrazlaw (Hohensalza) in the province of Posen was one of the founders of the Disconto-Gesellschaft in 1851; his brother,

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222. Ernst Wilhelm Schmidt, Männer der Deutschen Bank und der Disconto-Gesellschaft (Düsseldorf, 1957); Denkschrift aus Anlass des fünfundzwanzigjährigen Bestehens der Bergisch Märkischen Bank in Elberfeld. 8. December 1896 (Düsseldorf, 1896) pp. 4, 16; Friedrich Bremen, Aachener Disconto-Gesellschaft. Rheinische Disconto-Gesellschaft. Rheinisch-Westfälische Disconto-Gesellschaft. Eine Bank in Aachen in der Zeit zwischen 1872 und 1917. Ein Beitrag zur Wirtschaftsgeschichte des Aachener Raumes (Diss Fachhochschule Aachen, 1978) p. 202 in: Stadtarchiv Aachen, Az. CA 57: Arthur Liebmann, Acht Jahrzehnte im Dienste der Wirtschaft. Ein Lebensbild der Allgemeine deutsche Credit-Anstalt (Leipzig, 1938) p. 149.

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Adolph Salomonsohn, became the Syndikus (house lawyer) of the Disconto-Gesellschaft in 1863 and was a partner from 1869 until 1888; Moritz' son, Arthur Salomonsohn, was a partner of the Disconto-Gesellschaft from 1895 until the merger of the Disconto-Gesellschaft with the Deutsche Bank in 1929; and Adolph's son, Georg Solmssen (he changed his name), was a partner in the Disconto-Gesellschaft from 1911 until 1929.[223] In addition to these two major families, there are some more minor groups: Emil Russell and Ernst Enno Russell, father and son, both became partners; and when Alfred Lent became a partner of the Disconto-Gesellschaft, the path had to some extent been paved for him by his brother Hugo Lent, who sat on the board of various railway enterprises associated with the Disconto-Gesellschaft and eventually became an engineer with Siemens & Halske.

Nepotism was consciously practiced at the Berliner Handels-Gesellschaft; Carl Fürstenberg at one point wanted to make his bank into a centre for the offspring of directors of the Berlin Haute Banque, on the model of the French Banque de l'Union Parisienne. The Disconto-Gesellschaft and the Berliner Handels-Gesellschaft were more nepotist than banks in the form of public limited companies

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223. Kurt Zielenziger, Juden in der deutschen Wirtschaft (Berlin, 1930) pp. 112-124; Georg Solmssen, Beiträge zur Deutschen Politik und Wirtschaft 1900-1933. Gesammelte Aufsatze und Vorträge (Munich and Leipzig, 1934); A. Heppner and I. Herzberg, Aus Vergangenheit und Gegenwart der Juden in Hohensalza. Nach gedruckten und ungedruckten Quellen. Erweiterter Separatdruck von "Aus Vergangenheit und Gegenwart der Juden und der jüdischen Gemeinden in den Posener Landen" (Frankfurt/Main, 1907); Werner E. Mosse, Jews in the German Economy. The German-Jewish Economic élite 1820-1935 (Oxford, 1987) pp. 219-221.

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- Paul Wallich's failure to get a satisfactory post at the Deutsche Bank, where his father, Hermann Wallich, had been a director, is an interesting contrast - but less so than a private bank would be, where almost all partnerships would be allocated among one or two families.[224] In this as well the Kommanditgesellschaft auf Aktien was a halfway house.

The formation of the Disconto-Gesellschaft thus led to the introduction of a new corporate form to Germany. Its peculiar elements gave the Disconto-Gesellschaft an idiosyncratic corporate structure. It is true that the Kommanditgesellschaft auf Aktien was not an original invention of David Hansemann: it had been very widely used in France and Belgium since 1832. Hansemann himself had been slowly groping towards this concept with his series of amendments to the statutes of the Disconto-Gesellschaft during the years 1851-1855. But someone first has to know enough to tap the egg on its end; and Hansemann's introduction of Kommanditgesellschaft auf Aktien is distinguished by the brilliance and originality which highlights so much of Hansemann's career.

D. 1859: Year of Crisis, Year of Opportunity.

For Europe's financial markets, 1859 was a year of crisis: the depression which had begun with the crisis of the autumn of 1857 was heading towards its nadir; and from January 1859 war between France and Austria seemed all but inevitable. A financial crisis which is brought about by

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224. Paul Wallich, Lehr- und Wanderjahre, pp. 362-363, 394; contrast the private bank partners in Krüger, Kölner Bankiergewerbe, pp. 49, 57, 63, 72, 75, 79, 83, 88.

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war or revolution has a sharper edge than one which can be assigned to exclusively economic or financial causes; pure financial crises affect only the unsound houses, but a crisis brought about during a political emergency can also bring down solid houses which are temporarily illiquid (such as Abraham Schaaffhausen in March 1848). The stock exchange crisis of May 1859 was particularly severe because the chief theatre of the Italian War also happened to be the location of a railway, the Rothschild-dominated Austrian Southern Railway, the shares of which, popularly known as "Lombarden", were one of the most actively traded securities of the European bourses. As the troops of Napoleon routed the troops of Franz Joseph on the plains of Lombardy, the bears routed the bulls on the bourses of Europe. The greatest financial power of Europe, the House of Rothschild, was almost helpless as the share price of one of its chief assets melted away.[225] But one man's disaster is another man's chance. David Hansemann had, like many of his colleagues, plunged into deals during the boom period of 1856-1857, only to meet with disillusion after autumn 1857; the Henrichshütte, the lead mine "Neue Hoffnung" near Bleialf, and the shares of the Kosel-Oderberg Railway (in Upper Silesia) are all examples. But whether because of skill or luck, David Hansemann negotiated extremely slowly, and so concluded fewer deals and committed less capital than

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225. D[avid] Morier Evans, The History of the Commercial Crisis, 1857-58, and the Stock Exchange Panic of 1859 (London, 1850) pp. 148-170; D[avid] Morier Evans, Speculative Notes and Notes on Speculation, Ideal and Real (London, 1864) pp. 22-28.

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he would have if he had been quicker off the mark. The Allgemeine deutsche Credit-Anstalt (Adca) of Leipzig, founded in 1856, provides an interesting contrast. Adca participated in founding four major ventures during the boom of 1856-1857: the Credit- und Versicherungsbank in Lübeck, the Schweizerische Credit-Anstalt in Zurich, the Privatbank in Gotha, and the Elbhütten-, Affinir- und Handelsgesellschaft in Hamburg. Although all four of these companies later became quite respectable concerns (the Hamburg metal smelter is now known as the Norddeutsche Affinerie, which is owned by the precious metals concern Degussa and the base metals concern Metallgesellschaft), they suffered severe birth pangs and almost brought down Adca; other disastrous ventures of the period, such as the Kosel-Oderberg Railway, the Neustädter Hütte in the Harz and the Moldauische Nationalbank in Jassy/Moldavia (the last two ventures launched by the notorious Director Nulandt of the Anhalt-Dessauische Landesbank in Dessau) did not help much either. In addition to these major involvements, Adca also entered into negotiations over almost seventy other ventures.[226]

Not only was the Disconto-Gesellschaft remarkably cautious compared with its rivals during the boom of 1856-1857, it was richer in funds. The reluctance of the Mitbetheiligte to borrow from the Disconto-Gesellschaft, which appeared to cripple the Disconto-Gesellschaft in the early 1850's, became a great advantage during the crisis

226. Liebmann, Adca, pp. 32-35.

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years of 1857-1859. In addition to this, David Hansemann was quicker to cultivate the deposit business than his rivals, notably the Berliner Handels-Gesellschaft. Although he did not develop the deposit business with small customers as would later be done by Hermann Wallich at the Deutsche Bank with his Depositenkassen, Hansemann did attract money from companies.[227]

The Disconto-Gesellschaft thus entered the crisis year of 1859 in a remarkably strong position, and used the crisis to vault itself into the very first rank of financial institutions of Central Europe. During the year 1859 the Disconto-Gesellschaft:

> Established the "Prussia Consortium", a permanent underwriting syndicate for Prussian loans;
> Founded a major French bank, the Crédit Industriel et Commercial;
> Negotiated unsuccessfully to found a parallel bank in Russia;
> Lent money to the Duchy of Anhalt;
> Lent money to one of the largest German ironworks, the Phoenix;
> Lent money to the colliery "Vereinigte Präsident".

The formation of the Prussia Consortium was a direct result of the Italian War. Although outsiders like Ludwig Bamberger (in his pamphlet "Juchhe nach Italia!") and Ferdinand Lassalle (in his pamphlet "Po und Rhein") recognized the community of fate (Schicksalsgemeinschaft) between Italy and Germany, this was not the case of liberal public opinion. The Prince Regent (later Emperor William I), still suffering under the illusions of the liberal "New Era", wanted to rush to the defence of Austria with Prussian

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227. Däbritz, Disconto-Gesellschaft, p. 83.

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arms, and "defend Lombardy on the Rhine": only Austria's refusal to concede him the position of commander-in-chief of a unified German force prevented this. Prussia did, however, mobilize against France. Mobilization is as much a matter of money as a matter of men, and the Prussian Finance Minister, von Patow, had to turn to his old antagonist, David Hansemann; for Hansemann was now at the head of the most strongly capitalized financial institution in Prussia. Together the two men created the "Prussia Consortium", a semi-permanent syndicate of underwriters for Prussian loans. The first members of the Prussia Consortium were: the Disconto-Gesellschaft, which chaired the syndicate, and six private banks, S. Bleichröder, Mendelssohn & Co., Gebr. Schickler, F. Mart. Magnus, Breest & Gelpcke, and Robert Warschauer & Co. The first task of the new syndicate was to underwrite thirty million thalers worth of Prussian bonds to pay for the mobilization.[228] The Prussia consortium lasted until at least the First World War, although its membership changed greatly over the years, as the joint-stock banks like the Deutsche Bank and Dresdner Bank joined it and gained larger quotas, and the private banks disappeared or had their quotas diminished. It became the first of a series of consortia, such as one for Bavaria formed after 1866 by the Disconto-Gesellschaft, the Königlich Bayerische Bank of Nuremberg (which after 1920 became the Bayerische Staatsbank), and the House of Erlanger; a

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228. Hermann Münch, Adolph von Hansemann (Munich, 1932), pp. 77-78.

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Reichsanleiheconsortium formed after 1871 for loans of the imperial government; and a more fluid consortium formed for loans of the Free City of Hamburg. In the case of the Prussia Consortium and the Reichsanleiheconsortium, the Seehandlung, the Prussian state bank,permanently chaired the syndicates. (Prussia had two state banks: the Bank of Prussia, which chiefly issued bank notes; and the Seehandlung, which acted like a state-owned universal bank. The Bank of Prussia had private shareholders.) The ability to quickly and easily fund an army mobilization was a crucial advantage for Prussia in its impending conflict with Austria; Austria, by contrast, paid for its euphorias of mobilization (as during the Crimean War) and war (as in 1859) with the bitter hangover of fiscal catastrophe. The budgetary crisis which followed the war of 1859 led to the suicide of the brilliant Austrian Finance Minister, Freiherr von Bruck, the following year. In addition to a poor army and nationality problems, unbalanced budgets and a debased currency contributed to the expulsion of Hapsburg power from Germany. If the Prussia Consortium did contribute to establishing Prussian dominance in Central Europe, it was even more important in insuring the success of the Disconto-Gesellschaft. It provided the Disconto-Gesellschaft with a dominance over government bond issues, a safe, steady and profitable foundation which could compensate for the shaky edifices which rose above it, such as the Dortmunder Union.

Austria eventually did have the chance to have its finances taken under the firm hand of the Disconto-

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Gesellschaft, when some time after 1866 (the exact date is unfortunately not known) the Disconto-Gesellschaft made its peace with the House of Rothschild and became a member of the "Rothschild-Consortium", which included the Austrian Credit-Anstalt, the banking houses Moritz Wodianer, S.M. von Rothschild & Co., S.G. Sina (until his liquidation, which occurred shortly afterwards), and the Allgemeine Oesterreichische Bodencreditanstalt of Vienna; the Ungarische Allgemeine Creditbank of Budapest, the Hungarian affiliate of the Credit-Anstalt; M.A. von Rothschild & Söhne of Frankfurt am Main; the Disconto-Gesellschaft, S. Bleichröder, and (until the end of the 1870's) the Seehandlung in Berlin; the Bank für Handel und Industrie of Darmstadt; and Sal. Oppenheim jr. + Cie. of Cologne. Usually these banks were joined by de Rothschild Frères of Paris, and occasionally by N. M. Rothschild & Sons of London. The admission of the Prussian banks to the Rothschild Consortium was one of the most telling confessions of Austria's weakness: Austria could not finance its government without calling upon the richer neighbour to its north - a serious constraint on its freedom of military manoeuvre.[229]

Strange to relate, in the very same months that the Disconto-Gesellschaft was helping to supply funds to the Prussian government to prepare it for a possible war against France, it was also helping to found one of the major French banks, the Crédit Industriel et Commercial, transferring

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229. Münch, Adolph von Hansemann, p. 83.

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funds to Paris during one of the tightest money markets of the 1850's. The subscription for the shares of this new bank occurred in April 1859, and the founders were: Armand Donon, a partner of the banking house of Donon, Aubry, Gautier et Cie., the Ottoman consul general in Paris and a close friend of the powerful bastard half-brother of Napoleon III, Auguste, Count de Morny; Arthur John Eden, on behalf of the house of Thomson, T. Bonar & Co. of Old Broad Street, London, who was also a member of the administrative board of the Paris-Orléans Railway; Samuel Haber of the noted banking family of Carlsruhe, who was living as a rentier in Paris, and who subscribed in his own name and on behalf of David Hansemann; Michel Montané, a former deputy of the legislature and a member of the general council (Conseil général) of the Gironde, and of the Bordeaux Chamber of Commerce, resident at Paris; Cyr François-Natalis Rondot, a businessman of Paris, the Paris delegate of the Lyons chamber of commerce; François-Barthélemy Arlès-Dufour, a member of the Lyons Chamber of Commerce and of the general council of the Rhône, resident at Lyons, and a leading Saint-Simonian; and finally Albert Dufour-Féronce, a cousin of Arlès-Dufour, and a director of the Allgemeine deutsche Credit-Anstalt, resident at Leipzig. The bank Thomson, Bonar & Co. was an important English merchant bank of this period - they were bankers to the government of Uruguay - which had a parallel house in St. Petersburg, a curious arrangement at a time when Anglo-Russian hostilities had ceased but three years before. But as the participation of

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Prussia's leading bank in the formation of the Crédit Industriel at a time of deep Franco-German hostility also bears witness, profit is cosmopolitan.[230]

The formation of the new bank was authorized by the Emperor on 7 May 1859, countersigned by the Premier Eugène Rouher (the model for Zola's Eugène Rougon) and Pierre Magne, the Minister of Finance. Among the fifteen members of the first administrative board was David Hansemann.[231]

The Crédit Industriel et Commercial did not become the great rival to the Crédit Mobilier; that role was reserved to the Société Générale pour favouriser le developpment du Commerce et de l'Industrie en France, which was founded in 1864. The Crédit Industriel et Commercial instead became an important, but second-rank bank, which was small enough to avoid nationalization in 1945, but fell victim to Mitterrand's finer net in 1981; it still exists today, albeit under state control. Its major contribution to French finance was the introduction of cheques on the English system, which it began to proselytize in its very first year of operation. Significantly, in view of the Russian connections of its founder Thomson, Bonar & Co., the major financial deal of the first year of the Crédit Industriel was the placement on the Paris market of £1.6 million of a

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230. "Société Générale de Crédit Industriel et Commercial" in: Journal des Chemins de Fer, des Mines et des Travaux Publics (Paris, Saturday 9 April 1859) vol. 18 No. 15 p. 313; Cameron, France und Economic Development, p. 172.

231. "Société Générale de Crédit Industriel et Commercial" in: Journal des Chemins de Fer (Paris, Saturday 13 August 1859) vol. 18 No. 33 p. 715.

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total issue of £12 million worth of Russian bonds, paying 3%, issued at the very low price of 68%.[232]

It is not fully clear how David Hansemann and the Disconto-Gesellschaft became connected with the Crédit Industriel et Commercial, but it seems to have been through Arlès-Dufour (who was one of the major impulses behind the formation of the Crédit Industriel) and Arlès-Dufour led to Dufour-Féronce, who in turn led to the Allgemeine deutsche Credit-Anstalt, which was where Carl Mathy went after he left the Disconto-Gesellschaft.[233] There are two problems with this link: first of all, Mathy's relations with the Hansemanns were by no means friendly after a stormy departure from the Disconto-Gesellschaft, and secondly, Adca was in no position to invest in new French banks in 1859, since it was still prostrate after its errors of 1856-1857. It is possible that Adca brought in the Disconto-Gesellschaft because it did not want to pass up the deal, but felt unable to handle it on its own. As I have said before, the role of the Disconto-Gesellschaft in founding the Crédit Industriel has found its way into the literature on the history of French banking, but until now has not been mentioned in the literature on the history of German

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232. "Société Générale de Crédit Industriel et Commercial: Subscription pour l'Emprunt Russe" in: Journal des Chemins de Fer (Paris, Saturday 20 August, 1859) vol., 18. No. 34 p. 732; Journal des Chemins de Fer (Paris, Saturday, 31 December 1859) vol. 18 No. 53 p. 1045; Cameron, France and Economic Development p. 172 and note.

233. Bertrand Gille, "La Formation de la Société Générale" in: La Banque en France au XIX^e Siècle. Recherches Historiques (Geneva, 1970) pp. 158, 162 (= Travaux de Droit, d'économie, de Sociologie et de Sciences Politiques, No. 81).

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Banking. It is also not known when the Disconto-Gesellschaft finally broke its link to the Crédit Industriel et Commercial; presumably Adolph Hansemann allowed the connection to lapse after the death of his father in 1864, just as he neglected the affairs of the Phoenix.

There are two points about involvement of the Disconto-Gesellschaft in the formation of the Crédit Industriel et Commercial which are particularly extraordinary. The first point is that the Disconto-Gesellschaft should provide such funds to a French bank, at the very same time as it was financially equipping the Prussian government for an imminent war against France. The second point is that the Disconto-Gesellschaft was able to do this in April and May 1859, during the worst weeks of the crisis which hit the European bourses.

It appears to be in connection with the Crédit Industriel et Commercial that the Disconto-Gesellschaft entered into negotiations to establish a similar bank in Russia, which would be a logical extension in view of Thomson, Bonar's important Russian interests. We only know of this through a letter of Freiherr Abraham von Oppenheim to Gerson Bleichröder of 1859, and it is apparent that Hansemann's efforts were not crowned with success.[234] In the spring of 1863 David Hansemann made another attempt to conquer that mighty empire of the East: he spent much time in Russia trying to persuade the government to adopt a plan

234. Freiherr Abraham von Oppenheim, Cologne, 28 October 1859 to Gerson Bleichröder in Berlin, Bleichröder Archive, Box XXIX, folder 2.

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devised by him to nationalize and expand the Russian railway network. The negotiations were not successful; but it is interesting to note how easily Hansemann could separate his business interests from his liberal politics, and attempt to put the Czarist government on a sound financial footing at the same time as it was suppressing a Polish revolt. Hansemann had to be content with bringing back from Russia a contract with the Moscow-Ryazan Railway Company to issue 5,375,000 thalers worth of senior debentures, secured by a mortgage and a state guarantee. The Disconto-Gesellschaft thereby introduced one of the first Russian railway bond issues to the German stock exchanges.[235]

In the same year of 1859 the Disconto-Gesellschaft made a loan of a million thalers to the Ducal Anhalt-Dessau Estates Administration (herzoglich Anhalt-Dessauische Fideikommissverwaltung; the branch of the ducal Anhalt government which administered the monarch's estates), secured by a mortgage on the East Prussian estates of Duke Leopold IV of Anhalt-Dessau and Anhalt-Cöthen. The duchy of Anhalt borrowed these funds in order to rescue the Anhalt-Dessauische Landesbank, which was in serious straits after mismanagement during the boom years by its director Nulandt. This loan was less remarkable for its size or for the establishment of a new commercial connection, but rather because it marked the introduction of a new financial instrument to Germany: Partial-Obligationen. German mortgages are indivisible. It is not possible for a

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235. Bergengruen, David Hansemann, p. 688.

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borrower to issue bonds directly in small denominations. Instead, the borrower lodges a mortgage against his assets with a bank, which then issues bonds in registered form, which say "The Estates Administration of the Duchy of Anhalt promises to pay the Disconto-Gesellschaft a thousand thalers in ten years time." The Disconto-Gesellschaft then endorses these bonds, and further transfers take place through endorsing the back of the bonds. There are two important aspects to this: first of all, in Germany bank loans and bonds are not alternatives for a German borrower, they are two forms of the same thing. Ofter the literature does not distinguish when a loan only existed in the books of the bank, and when it was broken up into uniform amounts and certificates were printed. A German company cannot play Citibank off against Drexel Burnham Lambert. Secondly, the development of a bond market in Germany is hindered because German bonds are in registered form, and Continental financial markets are best set up for bearer securities. In the literature, the first example of Partial-Obligationen is generally deemed to be the Krupp bond issue of 1874; yet there is some evidence that a Partial-Obligationen issue of the Dortmunder Union antedates the Krupp issue. Alexander Bergengruen has raised the interesting point that the first example of Partial-Obligationen seems to be this loan to the Duchy of Anhalt of 1859, and if he is correct (this problem could best be solved by the scripophilists, since there should be certificates for each of these loans) then this financial innovation as well must be set to the credit of

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David Hansemann.[236]

Right before the outbreak of the Italian War, the Disconto-Gesellschaft and the Schaaffhausen'scher Bankverein extended a loan of 1.22 million thalers for six years to the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb. As I have mentioned before, the Phoenix was the largest German ironworks in the joint-stock form (Krupp was larger, but Krupp was a sole proprietorship) and a particular fiefdom of the House of Oppenheim. The bitter conflict between David Hansemann and Abraham Oppenheim was finally ended when the two men set about to reorganize the troubled Phoenix. In 1857 David Hansemann was given a seat on the Phoenix administrative board; in 1860, he became chairman of the administrative board and undertook the first of his three great reorganizations, the other two being the Henrichshütte and "Vereinigte Präsident". The loan of 1859 set the stage for this reorganization, because during the reorganization it was converted into equity to provide the Phoenix with new working capital.[237]

A parallel case is the loan to the colliery "Vereinigte Präsident". This colliery in Bochum was under

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236. Bergengruen, David Hansemann p. 687; Jacob Riesser, Die deutschen Grossbanken und ihre Konzentration im Zusammenhang mit der Entwicklung der Gesamtwirtschaft in Deutschland (Jena, ⁴1912) p. 393; Georg Obst, Geld-, Bank- und Börsenwesen. Eine gemeinverständliche Darstellung (Stuttgart,³¹1923) pp. 330-331; Annual Report of the Dortmunder Union for 1872/73, Werksarchiv, Hoesch AG, Az. DHHU 1390.

237. Oskar Stillich, Eisen- und Stahl-Industrie (Berlin, 1904) pp. 144-147 (=Nationalökonomische Forschungen auf dem Gebiete der grossindustriellen Unternehmung, vol. 1).

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the control of a Kommanditgesellschaft A. Alsberg, based in Münster/Westphalia. In 1859 the Disconto-Gesellschaft extended a large loan to the colliery, and when the colliery went deeper into trouble, David Hansemann reorganized the company and created the Bochumer Bergwerks-Actien-Gesellschaft in 1864, pushing out Alsberg in the process.[238]

In short, if we can pinpoint the Disconto-Gesellschaft's rise to be the mightiest bank in Germany to one year, that year is 1859. In that year the Disconto-Gesellschaft established its dominance over Prussian government loans; it helped found a major French bank, although this did not lead to a lasting connection; it pioneered a new financial instrument, the Partial-Obligation; and it lent to two major companies in the Ruhr, and thereby extended its interests in the heavy industrial heartland of Rhineland-Westphalia. The Disconto-Gesellschaft was liquid in 1859; its bitter rivals, like Oppenheim, Rothschild, Adca, were in temporary difficulties. Under the leadership of David Hansemann the Disconto-Gesellschaft brilliantly exploited its position of strength to vault into the front rank of European financial institutions.

E. The Disconto-Gesellschaft and its Rivals.

1. Sal. Oppenheim jr. + Cie.

Perhaps the best way to depict the rise of the

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238. "Rheinisch-Westfälische Briefe 107" in: Der Aktionär. (Frankfurt/Main, Sunday, 2 December 1860) vol. 7 No. 362 p. 735; "Rheinisch-Westfälische Briefe 121" in: Aktionar vol. 8 No. 375 p. 100.

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Disconto-Gesellschaft to the position of the foremost joint-stock bank in Germany is to discuss its position vis-à-vis its rival banks. I shall discuss the Disconto-Gesellschaft's relations with three private banks - since private bankers dominated the financial market in Germany in the middle of the nineteenth century - and one joint-stock bank, namely Sal. Oppenheim jr. + Cie., the House of Rothschild, S. Bleichröder, and the Norddeutsche Bank in Hamburg.

The relations between Sal. Oppenheim jr. + Cie. and the House of Hansemann were the most complex of all these; an initial bitter rivalry eventually gave way to the closest alliance. David Hansemann first came into contact with the House of Oppenheim in the early 1840's, when he was helping to establish the Rhenish Railway Company, the "iron Rhine" (in the memorable phrase of Friedrich Harkort) which was to break the Dutch stranglehold over river shipping. The first section of the Rhenish Railway went from Cologne to Aachen and Antwerp.

The young undertaking suffered numerous growing pains. One moment of financial stringency was only relieved by the timely sale of a new issue of 6000 shares, worth $1^1/_2$ million thalers, to the Cologne banking houses Sal. Oppenheim jr. + Cie., J.D. Herstatt, and J.H. Stein at a premium above par of 5%. This sale was almost too timely, because the approval of the shareholders for the new issue was obtained only afterwards, and the issue was therefore technically illegal. The Belgian government subsequently

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bailed out the ailing enterprise by purchasing these shares - which is to say that the Paris House of Rothschild helped finance the Rhenish Railway, since the early finances of Belgium were supplied by de Rothschild frères. With this share transaction began the ascendancy of Cologne finance over the Rhenish Railway Company. Abraham Oppenheim and Schnitzler of J.H. Stein took seats on the directorate of the railway (German railways, unlike other German companies, resembled Anglo-Saxon companies by not having separate directorates and administrative boards, but combined the functions of supervision and management). Oppenheim's tentacles were most ubiquitous. Substantial advances made Oppenheim into the railway's major creditor; suppliers of rails (such as the Michiels operation at Eschweiler), locomotives and construction material were frequently Oppenheim clients, so that payments to them by the railway were mere book entries within the House of Oppenheim; finally, Oppenheim was a major force on the bourse, and controlled the market for the shares of the Rhenish Railway. Oppenheim's conflicts of interest were almost too many to enumerate, and these led to quarrels with the other directors and especially with David Hansemann. Summing up the affair to the Belgian Finance Minister Nothomb in a letter of 16 December 1843, Hansemann wrote:

> "His [Oppenheim's] position as director and a keen banker places the task upon the other directors and me in particular to protect the interests of the company as much as possible against those of the banker. This task is all the more difficult to fulfill because he is a highly capable man and his interests are so variously interrelated. In essence, therefore, the position of Herr O. has

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> long been irreconcilable with that of a director of the company."[239]

These conflicts culminated in a proxy fight, which Oppenheim won all down the line. Hansemann and the other directors had no choice but to resign. With this Sal. Oppenheim jr. + Cie. confirmed its hold over the two great railways of the west: the Rhenish Railway and the closely linked Cologne-Minden Railway. Yet it is curious to note that Oppenheim was not able to exploit his victory over the Rhenish Railway, and be elected president. Oppenheim had acted too crudely, and the Aachen interest would not stand for him as president. Instead a compromise candidate was chosen: Gustav Mevissen. Mevissen was a very gifted manager, and made the Rhenish Railway into such a financially secure institution that it was able to act with great independence of the House of Oppenheim; the Rhenish Railway did not even have to call upon government aid in the form of an interest guarantee of its securities, as the Cologne-Minden Railway did. The Cologne-Minden Railway, by contrast, was the particular fiefdom of the House of Oppenheim and had Dagobert Oppenheim as its president. Since the Rhenish Railway did not have its securities guaranteed by the government, it did not have the threat of eventual nationalization hanging over its head, and expanded much more aggressively than the Cologne-Minden Railway. In the 1860's the aggressive Rhenish Railway crossed the Rhine and began to compete with the Cologne-Minden Railway in its

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239. Bergengruen, David Hansemann, pp. 183, 210, 248-249.

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most profitable market: the Ruhr. The Cologne-Minden Railway and the Rhenish Railway, in short, both began as creations of the House of Oppenheim; but the Rhenish Railway gradually outgrew its origins and won its independence, and hence two railways with a common origin became two decades later fierce competitors in the Westphalian coal districts.[240]

The next two decades marked the transition of the House of Oppenheim and the House of Hansemann from bitterest enemies to closest allies. Hansemann had left his post calling down a plague upon the entire Kölner Klüngel.[241] But Hansemann had swallowed his anger sufficiently by 1848 to save the Cologne clique by bailing out the house of Abraham Schaaffhausen at the urging of the houses of Oppenheim, Herstatt and Stein. Hansemann's and Oppenheim's co-operation in saving the Rhineland from financial collapse was the first step in reconciling the two men.[242] In 1848, however, David Hansemann was still not that well disposed towards Oppenheim. Oppenheim made the additional proposal that the government establish a mortgage bank. This was a sensible plan to prevent the crisis from recurring because one of the reasons for Schaaffhausen's collapse was its extensive holdings of illiquid mortgages, and the other Cologne banks were also sitting on potentially profitable

240. Bergengruen, David Hansemann, pp. 250-254; Hansen, Mevissen, vol. 1, pp. 323-328.

241. Bergengruen, David Hansemann, p. 254.

242. Bergengruen, David Hansemann, p. 433.

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but in 1848 unrealizable property loans. But Hansemann torpedoed this plan, although he was later to change course and join with Oppenheim in establishing the Erste Preussische Hypotheken-Actien-Gesellschaft of 1864.[243] It is possible that Hansemann and Oppenheim were already fully reconciled by 1853, when Mevissen and Oppenheim offered Hansemann the post as first director of the Bank für Handel und Industrie; but this offer may have come from Hansemann's close friend Mevissen, rather than from his old antagonist Oppenheim. We can definitely date the reconciliation between Hansemann and Oppenheim to 1857, when Hansemann was invited onto the administrative board of the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb; the Phoenix was almost Oppenheim private property, and Hansemann could not have joined the board without Oppenheim's full approval. In 1859-1860 David Hansemann successfully reorganized this Oppenheim heirloom, and after this the relations of Oppenheim and the Disconto-Gesellschaft could not have been closer.[244]

In 1860 the alliance of the House of Oppenheim and the House of Hansemann received its fleshly consummation through the marriage of Ottilie von Kusserow and Adolph Hansemann. Ottilie von Kusserow's mother was the sister of Abraham Oppenheim. Ottilie's brother was Heinrich von Kusserow, who

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243. Böhme, "Gründung und Anfänge", p. 206 note 77.

244. Geschichtliche Entwicklung und gegenwärtiger Stand des Phoenix, Aktien-Gesellschaft für Bergbau und Hüttenbetrieb in Hoerde. Denkschrift zum 60 jährigen Bestehen des Unternehmens im Jahre 1912 (Hoerde, 1912) pp. 15-16; Stillich, Eisen- und Stahl-Industrie, pp. 144-147.

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later became the first head of the German Imperial Colonial Office (Reichskolonialamt). Her sisters also married important businessmen: one married Louis Ravené, one of Germany's largest iron traders, another Moritz Simon, a leading private banker of Königsberg in East Prussia. With this marriage the Oppenheims added yet another useful link in the chain of strategic marriages which linked it with many of the most important banking houses of the Continent, such as Beyfus, Bischoffsheim, Fould, Haber, Heine, and Kaskel.[245]

Sal. Oppenheim jr. + Cie now became the Disconto-Gesellschaft's closest financial ally. From the early sixties onward David Hansemann, and after his death Adolph Hansemann, fought side-by-side with Abraham Oppenheim to establish a mortgage bank in Prussia. The first fruit of their labours was the Erste Preussische Hypotheken-Actien-Gesellschaft; in 1870 the Disconto-Gesellschaft, Oppenheim, Bleichröder, and Rothschild joined to found Germany's largest mortgage bank, the Preussische Central-Bodencredit-Actien-Gesellschaft. It would have been nearly impossible to set up this company without the help of Abraham Oppenheim, because Abraham Oppenheim had become a close friend of the Crown Prince William and his wife Augusta during their years at Coblenz, and Oppenheim was able to appeal directly to King William I and thus short-circuit the

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245. Krüger, Kölner Bankiergewerbe, p. 68 and note; Erich Achterberg, "Adolph von Hansemann" in: Neue Deutsche Biographie vol. 13, pp. 343-344; Münch, Adolph von Hansemann, p. 380.

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delaying tactics of the Prussian bureaucracy.[246]

Oppenheim and the Disconto-Gesellschaft co-operated extremely closely, and there are few ventures of the Disconto-Gesellschaft without Oppenheim participation: when the Disconto-Gesellschaft underwrote the Krupp bond issue in 1874, it was able to enforce the inclusion of Oppenheim in the underwriting consortium, in spite of Krupp's hatred for Oppenheim. There are also numerous ventures of the Disconto-Gesellschaft which can only be understood as arising from the Oppenheim connection. The Disconto-Gesellschaft's interests in the Rhenish non-ferrous metals industry are an example: the Disconto-Gesellschaft's involvement in the Commerner Bergwerks-und Hütten-Actien-Verein and the Bensberg-Gladbacher Bergwerks- und Zinkhüttengesellschaft "Berzelius" arose because these were Oppenheim companies. Another venture was the Deutsch-Belgische La Plata Bank of Cologne, founded in 1872; Cologne was the major European centre for importing hides from the River Plate until around 1870, and this led to a Rhenish financial involvement in Argentina and Uruguay. The most unfortunate new business introduced to the Disconto-Gesellschaft by the House of Oppenheim was when Albert Oppenheim discovered the Austrian engineer Victor Popp and persuaded the Disconto-Gesellschaft to help found the

246. Krüger, Kölner Bankiergewerbe pp. 186-187; Die Preussische Central-Bodenkredit-Aktiengesellschaft in Berlin 1870 bis 1920 Denkschrift aus Anlass des fünfzigjährigen Bestehen der Gesellschaft (Berlin, 1921) pp. 5-32.

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Internationale Druckluft- und Electricitäts-Gesellschaft.[247]

There is no evidence that the Disconto-Gesellschaft took a silent partnership in Sal. Oppenheim jr. + Cie. during the nineteenth century, although it seems by no means improbable. In February 1904, however, some of the older partners left the Cologne bank and the private bank needed more capital. The Disconto-Gesellschaft then converted Sal. Oppenheim into a Kommanditgesellschaft and became the silent partner. This was the culmination of the Disconto-Gesellschaft's involvement with the House of Oppenheim.[248] Curiously, Sal. Oppenheim has been able to preserve its independence to the present day and today is probably the second largest private bank in Germany (after Merck, Finck & Co.).

2. The House of Rothschild

As the Disconto-Gesellschaft commenced its rise to the front rank of European financial houses, it had to take a position vis-à-vis the mightiest financial institution in Europe: the House of Rothschild. An idea of the size of this financial power may be gained by the estimate for the fortune of the German Rothschild and Goldschmidt-Rothschild families in 1908: 310 million marks, divided among seven

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247. Carl Meyer, Berlin, 6 April 1874 to F.W. Gehra in Breslau, H.A. Krupp, W.A. II 13, fol. 20, Krüger, Kölner Bankiergewerbe, pp. 165, 198-199, Schinckel, Erinnerungen pp. 237-238.

248. Paul Wallich, Die Konzentration im deutschen Bankwesen. Ein Beitrag zur Geschichte der gegenwärtigen Wirtschaftsorganisation (Stuttgart and Berlin, 1905) pp. 148, 172 (= Lujo Brentano and Walther Lotz, eds. Münchner Volkswirtschaftliche Studien, vol. 74).

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individuals. By comparison, the largest German bank in 1913, the Deutsche Bank, had a nominal share capitalization of 200 million marks, with a market valuation of 496 million marks.[249] Thus until the eve of the First World War the fortune of the German Rothschilds could only be approached by the very largest German banks (and in 1913 the German banks were the most strongly capitalized in the world). In the middle of the nineteenth century, the new joint-stock banks must have seemed pygmies to the partners of the House of Rothschild. If the Disconto-Gesellschaft was to rise to the front rank of European banks, it had to hold its own against this Leviathan.

The Disconto-Gesellschaft first crossed swords with the House of Rothschild in 1858 when the Rothschilds in Austria fended off a challenge by the Pereires of the Crédit Mobilier and merged their holdings of the recently privatized railways of Lombardy, Venetia, Styria, and the Carniola into the Austrian Southern Railway (the Südbahn, traded under the name Lombarden). The Hansemanns were bitterly disappointed that they were not included in the syndicate which formed the newly merged railway although they had begun to cultivate their Austrian connections, including to the Rothschild-dominated Credit-Anstalt. About a fortnight after the merger was concluded, the Rothschilds offered through their Berlin correspondent, S. Bleichröder, a sub-participation to the Disconto-Gesellschaft and Robert

249. Mosse, Jews in the German Economy, p. 207; Jahrbuch der Berliner Börse 1914/1915, Ein Nachschlagebuch für Bankiers und Kapitalisten 36th ed. (Berlin, Leipzig, Hamburg, 1914).

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Warschauer & Co. at 115%, or a premium above par of 15%. Rothschild was bringing the shares to the market at a price of 120-121%, which Hansemann considered far too high an agio, especially since Austrian state funds had been depressed by Rothschild's sales. Both Disconto-Gesellschaft and Warschauer considered Rothschild's offer expensive and derisory, and turned it down.[250]

The Disconto-Gesellschaft now began its campaign to force Rothschild to come to terms with it. In that annus mirabilis of 1859, the Disconto-Gesellschaft staged the coup of underwriting 4½ million thalers worth of 4½% state guaranteed preference shares of the Rhine-Nahe Railway Company. The Rhine-Nahe Railway was a vital link in Germany's communication network, since it connected France and the Saar coalfield with the Rhine at Bingen, whence one could travel to Cologne or Frankfurt am Main. This deal was not that remarkable in itself, but was important as a blow against the Frankfurt House of Rothschild, which had previously dominated railway finance in its region. The Disconto-Gesellschaft first wanted to underwrite these shares in association with Frankfurt private bankers, but when they refused, it joined forces with that other joint-stock outsider, the Bank für Handel und Industrie, and together they underwrote the shares. The successful placement of these shares gave a great boost to the reputation of the Disconto-Gesellschaft as an underwriting

250. Münch, Adolph von Hansemann pp. 79-80.

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house.[251]

The Hansemanns laid their mines extremely carefully for their next blow against the power of the House of Rothschild. On a trip to Vienna in 1863, David Hansemann's keen financier's eye saw that that perennial borrower Austria offered great opportunities which the Disconto-Gesellschaft should cultivate more than it had in the past. Hungarian problems, Hansemann surmised, would force Austria to borrow again sooner rather than later. David Hansemann wrote back to Adolph in Berlin, asking his son to prepare a list of their business connections in Austria. David Hansemann's prediction came true the following year. In 1864 Austria again proposed to issue a loan, in this case a silver loan for 70 million gulden. In association with German, English, and Dutch houses the Disconto-Gesellschaft entered the auction for this loan and won the bidding. The Disconto-Gesellschaft won through against the opposition not only of Rothschild, but also of the largest joint-stock bank in the Danubian monarchy, the Rothschild-dominated Credit-Anstalt. The Disconto-Gesellschaft took down 23,500,000 gulden of the loan, or over a third; and later, when sales of the loan proved sluggish, the Disconto-Gesellschaft took over the selling of the loan on the various bourses from the Austrian Finance Ministry. From this coup Paul Model dates the Disconto-Gesellschaft's dominance in all great financial

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251. Münch, Adolph von Hansemann, pp. 78-79; Die Disconto-Gesellschaft 1851 bis 1901. Denkschrift zum 50 jährigen Jubiläum (Berlin, 1901) p. 30.

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transactions.[252]

This blow deep into the Rothschild's financial heartland impressed the Rothschilds with the importance of collaborating with the Disconto-Gesellschaft. After the Prusso-Austrian campaign against Denmark in 1864, the Disconto-Gesellschaft, S. Bleichröder, Sal. Heine, the Norddeutsche Bank and M.A. von Rothschild & Söhne (the Frankfurt House of Rothschild) discussed plans for business in the newly conquered duchies: a Landesbank (regional bank) for Schleswig-Holstein, and plans to form a public limited company to build a canal to connect the North Sea and the Baltic. Although both of these plans fell through, at a meeting in Altona Adolph Hansemann met and became a close friend of Freiherr Mayer Carl von Rothschild. This paved the way for a full alliance between the Disconto-Gesellschaft and the House of Rothschild, which was consummated when the Disconto-Gesellschaft became a member of the Rothschild Consortium for Austrian loans, as I mentioned above.[253]

With this the House of Rothschild acquired a strong partner in the marketplace of Berlin, which was rapidly growing in importance with the success of Prussian arms. The Rothschilds already had a correspondent in the person of

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252. Münch, Adolph von Hansemann, pp. 81-82; Paul Model, Die grossen Berliner Effektenbanken ed. Ernst Loeb (Jena, 1896) pp. 22-23.

253. Däbritz, Disconto-Gesellschaft, pp. 119-120; Münch, Adolph von Hansemann pp. 83-84; Fritz Stern, Gold and Iron: Bismarck, Bleichröder and the Building of the German Empire (New York, 1977) p. 53.

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Bleichröder (at first Samuel Bleichröder, and later his more famous son Gerson Bleichröder), but the Rothschilds did not like to be dependent on only one house when they could play two houses off against each other. Bleichröder was frequently worried by the intimacy between the Hansemann and the Rothschilds. In fact, Adolph Hansemann and Freiherr Mayer Carl von Rothschild from the Frankfurt house corresponded almost every day from 1866 until the Freiherr's death in 1886.[254]

By the 1870's, the Frankfurt house of Rothschild was playing a less active role in developing new business and limiting itself to administering one of the largest fortunes in Europe. Thus Rothschild was less important in initiating new business for the Disconto-Gesellschaft than Sal. Oppenheim jr. + Cie. was, but it was an extremely valuable ally and increased immensely the Disconto-Gesellschaft's power to place securities. The House of Rothschild co-operated with Oppenheim, Bleichröder, and the Disconto-Gesellschaft in founding the Preussische Central-Bodencredit-Actien-Gesellschaft; in fact, Bleichröder's share was cut in half (the share capital of 12 million thalers was initially split evenly four ways) so as to allocate $1^1/_2$ million thalers worth of shares to the Paris and London Rothschild houses. M. A. von Rothschild & Söhne helped the Disconto-Gesellschaft in the privatization of the Brunswick State Railways and in the various financial

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254. Münch, Adolph von Hansemann, p. 83; Stern, Gold and Iron, p. 428.

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transactions involving the Dortmunder Union. When the Provinzial-Disconto-Gesellschaft was launched, it was designed to serve as a branch network for the Frankfurt house of Rothschild as well as for the Disconto-Gesellschaft, and the two banks later jointly liquidated the Provinzial-Disconto-Gesellschaft. Whenever a financial transaction required the assistance of the London market, the Disconto-Gesellschaft would go to N. M. Rothschild and Sons first. When the Disconto-Gesellschaft wanted to place in London some 5% treasury bonds of the North German Confederation in November 1870 to finance the Franco-Prussian War, Hansemann approached N. M. Rothschild and Sons, but they refused because of their connections to the Paris house. (Instead the bonds were placed through the London Joint Stock Bank.) The one major transaction of the Gründerjahre which the Disconto-Gesellschaft owed to its connection with the House of Rothschild was the 7% Currency Loan of Tax Relief Bonds of the City of New York of 1872. Investing in Tweed's New York, however, was perhaps not the most brilliant financial coup. When Argentina ran into trouble during the Baring Bank Crisis of 1890 and its loans had to be re-negotiated, Adolph von Hansemann conducted negotiations with the help of the London House of Rothschild.[255]

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255. Evidence of Adolph von Hansemann in the libel suit against the Reichsglocke about founding of Centralboden: "Vom Prozess der 'Reichsglocke' " in: Norddeutsche Allgemeine Zeitung (Berlin, Friday 19 January 1877) vol. 16 No. 15; Disconto-Festschrift, pp. 37, 73-74; Däbritz, Disconto-Gesellschaft, pp. 176-177; Däbritz, David und Adolph von Hansemann, pp. 104-106.

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The close relationship which Adolph von Hansemann enjoyed with Freiherr Mayer Carl von Rothschild continued with Mayer Carl's son and successor, Freiherr Willy von Rothschild. When Willy died in 1901, the Rothschild family faced the problem that all male heirs of that branch had died out. The Rothschilds had faced this problem once before, when Amschel Mayer - the Frankfurt brother - died leaving only female issue. Then the problem was solved by transplanting the Naples branch, which was conveniently at leisure after the defeat of Francis II, back to Frankfurt. Now the Naples branch had only female issue, and the Paris and London Rothschilds had to decide whether to send one of their own number back to Frankfurt. Curiously, they displayed no desire to exchange the fleshpots of London and Paris for the charms of the entrepôt on the Main. They decided to close the old Frankfurt house, and transfer its business to a new branch which the Disconto-Gesellschaft would establish. The Disconto-Gesellschaft had hitherto held back from establishing its own branch in the city because of its links to the house of Rothschild; the Deutsche Bank had a branch in the city since 1886. Now this loyalty received a more than generous reward. The business was transferred to the new Disconto-Gesellschaft branch without a single penny being demanded for it by the Rothschilds - a rare occurrence indeed. The Frankfurt house of Rothschild had been somewhat dormant in initiating new financial transactions, but it enjoyed tremendous goodwill. The Disconto-Gesellschaft sent Otto Ulrich, a Procurist

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since 1883, to be the director of the new branch. Most of the old employees were retained. The new branch took over the previous agency business of the Rothschilds, such as being paying agent for the coupons of Pfandbriefe issued by the Preussische Central-Bodencredit-Actien-Gesellschaft. To provide the new branch with a suitable building, the Disconto-Gesellschaft assembled a piece of property with its chief facade facing the Gutenberg monument on the Rossmarkt, and bordered by the old Schlesingergasse and the Junghofstrasse, totalling 1871 square metres: this property still remains one of the central buildings of the Deutsche Bank's headquarters in Frankfurt am Main. Reflecting the skill on the stock exchange of the old Rothschild house, the Disconto-Gesellschaft intended that the new branch specialize in stock and share brokerage (Kommissionsgeschäft).[256]

3. S. Bleichröder.

The Berlin banking house with which the Disconto-Gesellschaft worked most closely was another Jewish firm: S. Bleichröder. The anti-Semitic muckraker Rudolph Hermann Meyer called the two houses "our financial Dioscuri" and merged their names into "Disconto-Bleichröder".[257] After arriving at his bank at 10 or 11 in the morning, Adolph von

256. Disconto-Gesellschaft Annual Report, 1902, pp. 12-13, RWWA, Az. 92 Gd; Disconto-Festschrift, pp. 220-221, 267; Ernest Korach, Das deutsche Privatbankgeschäft. Studien zu seiner Geschichte und heutigen Stellung (Dissertation, Berlin 1910) pp. 39-44.

257. Rudolph Hermann Meyer, Politische Gründer und die Corruption in Deutschland (Leipzig, 1877) pp. 36-37.

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Hansemann would cross the Behrenstrasse to confer with one of the Bleichröder partners. Junior partners such as Emil Hecker and Julius Schwabach conferred regularly when they met at the stock exchange.[258] In spite of this closeness and geographical proximity, however, the connection of the Disconto-Gesellschaft to S. Bleichröder remained more tenuous than that to the Oppenheims, which was consummated through marriage, or to the Rothschilds, which culminated in a merger. Bleichröder and the Disconto-Gesellschaft often worked very closely together; but the services they offered were too similar for the banks not to clash from time to time.

There are numerous instances of the co-operation between the two banks. They were co-founders of the Prussia Consortium. They worked together on the plans for the Landesbank for Schleswig-Holstein in 1864. They joined together in a bid for the Prussian government's holding of Cologne-Minden Railway shares when the Prussian government was trying to raise money for the war of 1866. Bleichröder was one of the four founders of the Preussische Central-Bodencredit-Actien-Gesellschaft, although as I mentioned above, his quota was later cut in half. The banks worked in tandem when selling government securities during the Franco-Prussian War. As members of the Rothschild Consortium, they underwrote Hungarian securities and ultimately reorganized the kingdom's finances. They also acted together in the late

258. Münch, Adolph von Hansemann, p. 384; Hans Fürstenberg, Carl Fürstenberg: Die Lebensgeschichte eines deutschen Bankiers (Berlin, 1931) pp. 43-44.

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1880's when underwriting Russian bonds. Bleichröder and the Disconto-Gesellschaft also co-operated in financing the Loewe concern, in particular the Union Electricitäts-Gesellschaft.[259]

As the two foremost German bankers, Bleichröder and Hansemann often had to play cameo roles in colonial ventures which the government encouraged but were not in themselves particularly profitable: these included the Deutsch-Asiatische Bank and ventures in Samoa, New Guinea, and German Southwest Africa. A somewhat similar venture was the reorganization of the Roumanian railways after the fall of Strousberg, which Bleichröder and Hansemann embarked upon not for the sake of profit but at the insistence of Bismarck. This venture is particularly interesting, because we know the proportions in which the two houses participated, which gives us an idea of their relative size: the Disconto-Gesellschaft invested double the amount that Bleichröder put up. The later development of Roumanian business did prove profitable: the two banks enjoyed a virtual monopoly in underwriting Roumanian government bonds, handled the Roumanian government's business in Berlin (such as paying for Krupp cannon), and pioneered the Roumanian petroleum industry.[260]

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259. Disconto-Festschrift, pp. 49-51; Stern, Gold and Iron pp. 130-131, 430, 440, 446-447.

260. Disconto-Festschrift, pp. 62-65; Stern, Gold and Iron, pp. 350-393, 400-401, 412-413, 431, 587 note 128; M. Müller, Vienna, 29 November 1881 to Friedrich A. Krupp, Essen, H A Krupp, W A IV 238, fol. 16; Georg Solmssen, "Die Mitwirkung der Disconto-Gesellschaft an der Entwicklung der Erdöl-Industrie" in: Solmssen, Beiträge zur Deutschen Politik und

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There is, however, enough evidence of frequent competition between Bleichröder and the Disconto-Gesellschaft (thanks largely to the researches of Fritz Stern) to add an interesting touch of chiaroscuro to this picture of outward harmony. Bleichröder and Hansemann each tried to grab from the other the business of financing the French indemnity after the Franco-Prussian War. Bleichröder reacted with horror when the Disconto-Gesellschaft began to make soundings in an area which Bleichröder regarded as peculiarly his own: Egyptian bonds.[261]

The privatization of the Brunswick State Railways shows the most interesting plot. First the Bank für Handel und Industrie attempted to reserve the business for itself, but Bleichröder forced his way into the consortium; then the Disconto-Gesellschaft came up with a rival offer and tried to get the business away from the Bank für Handel und Industrie and Bleichröder; finally the Disconto-Gesellschaft joined forces with the Bank für Handel und Industrie and Bleichröder.[262] This rapid switch from competition to co-

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Wirtschaft 1900-1933 (Leipzig, 1934) vol. 2 pp. 459-483.

261. Stern, Gold and Iron, pp. 164, 425-426.

262. The sources for this information about the Brunswick railway privatization, which I do not have the room to discuss in detail, are: Diplomatic correspondence, Friedrich von Liebe, Brunswick Minister Resident in Berlin, 20 April 1869 to the Ducal Counsellor Christian Zimmermann; Liebe 27 July 1869 to Zimmermann; Zimmermann 10 May 1869 to Liebe; Liebe 24 May 1869 to Zimmermann; Liebe 10 June 1869 to Zimmermann; Liebe 27 July 1869 to Zimmermann in: Niedersächsisches Staatsarchiv in Wolfenbüttel, Az. 12A Neu, Fb. 7a, Nr. 3634; Adolph Hansemann and Adolph Salomonsohn, Direction der Disconto-Gesellschaft, Berlin, to Ducal Ministry of State, 16 August 1869 in: Nds StA Wolf., Az. 12A Neu, Fb. 7a, Nr. 3669; Contract dated 27 September 1869, Nds

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operation was almost certainly more typical than the untroubled harmony among "befriended banks" which is depicted in official company histories.

4. The Norddeutsche Bank in Hamburg.

The Norddeutsche Bank in Hamburg was established in the boom year of 1856, and stood up to the Hamburg commercial crisis of the following year remarkably well. Among the companies it helped found were the Norddeutsche Affinerie (1866); the Vereinigte Königs- und Laurahütte (1871); the Gelsenkirchener Bergwerks-Actien-Gesellschaft (1873); the Reihersteig-Schiffswerfte und Maschinenfabrik (1881); the Jute-Spinnerei und Weberei Hamburg-Harburg (1882); the Anglo-Continentale (vorm. Ohlendorff'sche) Guano-Werke (1882); the Hamburger Freihafen Lagerhaus-Gesellschaft (1888); the Hammonia Stearin-Fabrik (1889); the Internationale Druckluft- und Electricitäts-Gesellschaft (1890); the H. B. Sloman & Co. Salpeterwerke Actien-Gesellschaft (1904); and the Allgemeine Petroleum-Industrie Actien-Gesellschaft (1905).[263]

The Norddeutsche Bank and the Disconto-Gesellschaft co-operated in 1873 in founding the Gelsenkirchener Bergwerks-Actien-Gesellschaft. Just at this period, however, the two banks became estranged. The Norddeutsche Bank co-operated

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StA Wolf., Az. 23 Neu, Fb. 1, Nr. 1343, fol. 39; "Braunschweigische Staatsbahnen" in: National-Zeitung (Berlin, Thursday 19 August 1869) Nr. 384, Beiblatt; "Berliner Börse 19 November" in: Aktionär (Sunday 21 November 1869) vol. 16 No., 830 p. 715 and note.

263. Max Wirth, Geschichte der Handelskrisen (Frankfurt, ⁴1890) pp. 405-406; Henry Wulff, Norddeutsche Bank in Hamburg 1856-1906 [Berlin, 1906] pp. 3-9, 22-23.

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with another Berlin correspondent, the Berliner Handels-Gesellschaft, in financing Strousberg's railways, and this led to subsequent lawsuits when the Disconto-Gesellschaft moved in to pick up the pieces as Strousberg gradually lost control of his railways in 1870-1871. Strousberg in his memoirs has detailed the struggle between the Norddeutsche Bank and the Disconto-Gesellschaft for control of the Halle-Sorau-Guben Railway Company. No love was lost between the two banks either when the Norddeutsche Bank joined forces with Jacob Landau to set up their own operation in Berlin, the Hamburg-Berliner Bank. The lawsuits, however, were eventually settled, the Hamburg-Berliner Bank was swept away by the Crash of 1873, and by 1879 the Disconto-Gesellschaft and the Norddeutsche Bank were reconciled.[264]

In that year the chairman of the supervisory board of the Norddeutsche Bank, Gustav Godeffroy, wrote a letter to Gerson von Bleichröder which helps clarify the relations between the Norddeutsche Bank and its various allies, which are otherwise so difficult to define. Godeffroy had heard that Bleichröder was "furious" (ungehalten) because the Norddeutsche Bank would not cut him in on a new bond issue for the city of Hamburg. Godeffroy began by pointing out that the consortium for Hamburg loans consisted of M. A. von Rothschild & Söhne of Frankfurt, the Disconto-Gesellschaft, L. Behrens & Söhne of Hamburg and the Norddeutsche Bank, and that Bleichröder was much closer to the first two houses

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264. Schinckel, Errinnerungen, p. 213; Bethel Henry Strousberg, Dr. Strousberg und sein Wirken (Berlin, 1876) pp. 303-304.

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than he was to the Norddeutsche Bank. Secondly, Godeffroy said that his influence as chairman of the administrative board was limited; he had only one vote. He could only do things with the management (Direction), not against it. Thirdly, Godeffroy enumerated the allies of the Norddeutsche Bank, observing to Bleichröder that it could not just "shove aside the old connections with which the Norddeutsche Bank has co-operated since its formation, namely Disconto-Gesellschaft, Berliner Handels-Gesellschaft, Mendelssohn, Warschauer, and now and then Jacob Landau." Fourthly, Bleichröder was so intimate with the Rothschilds that he could not extend full reciprocity to the Norddeutsche Bank. Godeffroy then added:

> "In the meantime the Commerz + Disconto Bank here in association with Jacob Landau has knocked the Norddeutsche Bank group for six (aus dem Felde geschlagen). The offer must have been horribly low, since the Norddeutsche Bank's offer was such that one could only speak of losses, not of profits. This excessive competition which every day more and more makes its way into every field and ruins all business is going to lead to the point that henceforth the conclusion of profitable bond and conversion deals will number among the exceptions."[265]

This letter reflects the declining interest rates of the period 1873-1896, which meant government borrowers were in an unusually strong position, and could demand more and more competitive bids from investment bankers.

The connection of the Disconto-Gesellschaft and the Norddeutsche Bank thickened when the two banks joined in 1887 to found the Brasilianische Bank für Deutschland, and

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265. Gustav Godeffroy, Hamburg, 15 June 1879 to Gerson von Bleichröder, Bleichröder Archiv, Box XXXIV, folder 7.

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together took silent partnerships in H. Albert de Bary of Antwerp and Ernesto Tornquist of Buenos Ayres. Together the banks underwrote a number of Argentine loans in the boom years which preceded the Baring crisis. The Norddeutsche Bank invested 1.691 million marks in the tandem banks Bary-Tornquist; the Disconto-Gesellschaft 2.187 million marks. In 1887 the two banks joined in another venture in South America, the construction of the Great Venezuela Railway. Finally, in 1890 the two banks founded the Internationale Druckluft- und Electricitäts-Gesellschaft.

These last three ventures turned out disastrously. The Argentine loans fell when the Baring Crisis hit in 1890; the Great Venezuela Railway encountered tremendous engineering, financial, and political difficulties (a default which followed a revolution in Venezuela was only settled by a naval demonstration); and Popp's Internationale Druckluft- und Electricitäts-Gesellschaft was a catastrophe. Although these ventures were ultimately turned around and reorganized, in the early 1890's the Norddeutsche Bank and the Disconto-Gesellschaft were locked into three unfortunate financial operations which were draining them of cash.

By 1895 the Norddeutsche Bank wanted to expand beyond Hamburg; its fiercest rival, the Commerz- + Disconto-Bank, had set up a branch in Berlin. The Disconto-Gesellschaft also began to feel that its policy of no branches was a mistake; it was falling further behind the Deutsche Bank, which had extremely profitable branches at Bremen, Hamburg,

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and London. Hansemann disliked "leaving his house", as he called it; but he fully trusted the director of the Norddeutsche Bank, Max von Schinckel. A merger would solve many problems at one blow: in addition to allowing the Norddeutsche Bank to expand to Berlin, and the Disconto-Gesellschaft to the Hanseatic cities, the merger would set free reserves which could be used to write off the bad loans. Schinckel and the Disconto partner Emil Russell worked out the details. The Norddeutsche Bank, which had been a public limited company (Actien-Gesellschaft) since its formation in 1856, was converted into a Kommanditgesellschaft auf Aktien, like the Disconto-Gesellschaft, with a Kommandit-share capital of 40 million marks plus 1.2 million marks in capital to be put up by the new active partners (Geschäftsinhaber). The active partners were Adolph von Hansemann, Emil Russell, Alfred Lent, Alexander Schoeller, and Max von Schinckel, since Schinckel's colleague Ernst Petersen initially declined to become an active partner. In the meantime the share price of the Norddeutsche Bank had sunk to the 140-150% range, so at an agreement on 15 March 1895 Emil Russell and Max von Schinckel agreed to set the swap terms at 6000 marks Disconto-Gesellschaft shares for 9000 marks Norddeutsche Bank shares, equivalent to a price of 150% for each Norddeutsche Bank share. This was on the low side, but it would set free so many reserves at once that the combined banks could write off all their loss-making operations. Very few people were told of the merger plan: Russell and

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Schinckel even kept the matter secret from their supervisory boards, and announced the plan by sending telegrams to all the newspapers. The supervisory board members were furious about not being told - there are always some members who regard insider trading as their rightful perquisite - but the extraordinary general meetings of the two banks, called on 16 April 1895, approved the merger. When the Imperial Tax Office came asking after the stamp for the merger contract, Schinckel smugly told the Tax Office that there was no merger contract: the merger had gone through on the basis of a handshake.

To pay for this merger the Disconto-Gesellschaft raised its capital from 75 to 115 million marks. The Norddeutsche Bank had itself just raised its capital from 45 to 60 million marks; in addition, it had reserves of $14^1/_2$ million marks. The merger thus set free $34^1/_2$ million marks to write down assets. The Norddeutsche Bank remained nominally independent, continuing to operate under its old name: this was necessary to retain the good will and avoid offending Hanseatic sensibilities. Paul Wallich has also said that the banking market in Hamburg was a very tight oligopoly (a similar situation prevailed in Württemberg) and the only way the Berlin banks could break into this market was to buy their way in.

On the whole, the merger seems to have been a success: the loss makers were transformed into the "sources of future profits", as Adolph von Hansemann said, andthe dividend of the Norddeutsche Bank recovered to 8%. The Norddeutsche

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Bank expanded only modestly after its merger with the Disconto-Gesellschaft; by 1914 it had seven deposit-taking offices (Depositenkassen) in Hamburg and one in Harburg; in 1904 it absorbed the bank W. S. Warburg in Altona, and converted it into a branch. It also had a silent partnership (Kommandite) in Ephraim Meyer & Sohn in Hannover. It retained its nominal independence until October 1929, when it, like the Disconto-Gesellschaft, was absorbed into the Deutsche Bank und Disconto-Gesellschaft.[266]

F. Internal Organization and Management of the Disconto-Gesellschaft.

The internal organization of the Disconto-Gesellschaft was divided in two: the Chef-Cabinet and the Directionsbureau. The Chef-Cabinet formulated the general policies of the bank; it decided its investments in various companies; and it negotiated the financial transactions with governments, municipalities, and companies. The Directionsbureau took care of the current accounts and the technical management of the money and securities entrusted to the bank. In Wall Street terms, the Chef-Cabinet was the front office, which decided investment policy; the Directionsbureau was the back office, which managed the operations. The Chef-Cabinet had various departments under its supervision: the arrangement of the underwriting syndicates, the archive, business with the Disconto-

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266. Schinckel, Erinnerungen, pp. 239-243; Paul Wallich, Konzentration, pp. 72, 100-101, 107, 118-119; Riesser, Deutsche Grossbanken, p. 735.

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Gesellschaft's branches and closely associated industrial enterprises (such as the Dortmunder Union and the lead mine at Bleialf), as well as the legal department. The Directionsbureau looked after the current accounts, all stock market operations, safekeeping of securities, redemptions of bills, coupons and matured bonds, the audit and bookkeeping department, and the personnel department. The Chef-Cabinet was always under the personal direction of Adolph von Hansemann. Among the partners of the eighteen-seventies, Johannes Miquel, Emil Russell, and the Geheime Baurat Alfred Lent worked in the Chef-Cabinet, whilst Emil Hecker, Adolph Salomonsohn (who started as the house lawyer, but later switched to commercial problems) and subsequently Alexander Schoeller worked on the day-to-day business. The partner Emil Hecker represented the Disconto-Gesellschaft on the stock exchange; as the business expanded in size, some of the Procurists were named as floor brokers.

Every day after the bourse had closed the partners met in Hansemann's office around two in the afternoon. After the late eighteen-eighties they were joined by Director Curt Erich, Hansemann's right-hand man, and by the Disconto-Gesellschaft floor brokers. After the partners had reported on the state of the stock exchange, they discussed the general economic situation and determined the disposition of the bank's investments.[267]

The partner Georg Solmssen has left a record of the management methods of the Disconto-Gesellschaft. He writes

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267. Münch, Adolph von Hansemann, pp. 71-72.

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that the management of the Disconto-Gesellschaft was based upon two principles: collegiality and that everything must be in writing. The original of all incoming correspondence, and a copy of all outgoing correspondence circulated amongst a defined group of responsible persons. Every business transaction, even if it arose from an oral conversation, was written down, circulated, and filed away. Whether or not the partners had seen the document was determined by notes made on the document. Hansemann considered this particularly important, and would have laughed at anyone who maintained that Hansemann must be too busy to put everything in writing. One might think this would make the Disconto-Gesellschaft a bureaucratic monolith, but Solmssen maintains that the opposite was in fact true: the solid foundation of thorough documentation and collegial backing gave the Disconto-Gesellschaft the confidence to take risks. Another interesting management technique made use of by the Disconto-Gesellschaft was the Dezernatsystem. Instead of using young trainees as mere secretaries, they were each delegated an area of expertise on which they were to report back to the partners, who researched the matter as well. The Dezernatsystem was a fruitful way to generate new ideas and suggestions and prevent the bank from degenerating into a system of merely reporting orders from the top down. Solmssen regards the collegial principle as especially important for a bank which, as the trustee of other people's money, has serious fiduciary obligations. A sole proprietor often regards himself and the interests of his firm as

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identical, and when he runs a bank he runs the risk of treating the monies entrusted to him as though they were his own. Furthermore, strict principles are important to maintain mutual respect between employers and employees. The employees must know that management follows the same strict rules about recording transactions, bookkeeping, and security regulations as they do. Each employee must have the right of free access at any time to the management. Finally, the aristocratic right to manage must come from a rule of the best; management must conduct their private lives according to the principles of the institution they serve. Although Hansemann lived in the grand manner to impress clients, he would have been ashamed if his budget did not balance to the last penny.[268]

Solmssen's account is clearly an ideal, although many contemporary companies could learn much from his management principles. We have no way of knowing the extent to which the Disconto-Gesellschaft lived up to this ideal. It is hard to credit Solmssen when he says that the Disconto-Gesellschaft was able to avoid the dangers of bureaucracy; in fact, the elaborate and bureaucratic system of putting everything in writing helps explain certain rigidities in the Disconto-Gesellschaft's policies. Judging by results, especially after 1873, the Disconto-Gesellschaft does not appear especially well-managed. On the other hand, the Disconto-Gesellschaft partners did engineer a "reverse

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268. Solmssen, Beiträge zur Politik und Wirtschaft, vol. 1, pp. XVIII-XXI.

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takeover" of the Deutsche Bank after the 1929 merger (as I mentioned above), which presumably reflects superior management skills. The Disconto-Gesellschaft was about as well organized as a large German universal bank could be; its defects reflect the fault of the type, not necessarily the faults of the Disconto-Gesellschaft. Other banks, such as the Berliner Handels-Gesellschaft or the private banks, being smaller and hence less dependent on outside capital, enjoyed a greater independence from outside investors and could be more informal and entrepreneurial; which I think is reflected in their greater success.

The essential point about the Disconto-Gesellschaft's management is that it was a one man show. Adolph von Hansemann ruled the bank in a style which is described as "autocratic" and "dictatorial". In spite of a manner which was often brusque, Hansemann was able to attract and retain talented colleagues. Hansemann's name was so associated with the Disconto-Gesellschaft that after his death in 1903 August Thyssen could plausibly write to Carl Klönne that the Disconto-Gesellschaft now had no choice but to merge with the Deutsche Bank; which was in fact what happened, albeit 26 years later. (It is not likely, however, that Thyssen's motive in urging a Deutsche Bank-Disconto merger was a concern for the well-being of the Disconto-Gesellschaft; Thyssen probably hoped that after such a merger the Deutsche Bank would clean out some of the Disconto-Gesellschaft's heavy industrial deadwood, such as the Dortmunder Union, which would allow Thyssen to get his hands on those

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industrial assets - plus some valuable assets, such as the Gelsenkirchener Bergwerks-Actien-Gesellschaft.) Adolph von Hansemann was a particularly stubborn autocrat. He often clung to loss-making enterprises long after a more prudent financier would have sold and cut his losses. The financial journalist and later editor of the Vossische Zeitung, Georg Bernhard, claims that it was Hansemann's stubbornness that stuck the Disconto-Gesellschaft with the Great Venezuela Railway, almost bringing the bank down in the process. Hansemann's stubbornness is perhaps best exemplified by the story of the Korean gold mines in the 1890's. English gold-seekers were rumoured to have struck gold in Korea, but to avoid paying the government the royalty they had kept it quiet by bribing the local inhabitants. Hansemann sent out a mining engineer from Magdeburg, who at first found nothing. Suddenly the news arrived that he had struck gold in several places. No sooner had Hansemann and his partners in the deal had time to celebrate than the news arrived that it was all a fraud; the Koreans, hoping the Germans would bribe them as the English had done, had "salted" the ground with gold nuggets, and the Magdeburg mining expert had resigned in disgrace. Max von Schinckel, who had invested in the Korean mines, asked a mutual friend what Hansemann thought about the fraud. The friend replied: "Hansemann still does not believe it!" Hansemann's stubbornness goes some way to explain why the Disconto-Gesellschaft would stick it out with losing, open-ended commitments like the Dortmunder Union instead of cutting losses once the

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situation was hopeless.[269]

There is one more aspect of the Disconto-Gesellschaft which I would like to discuss. This is the character of its supervisory board. The Disconto-Gesellschaft's supervisory board was very different in its composition from those of the Berliner Handels-Gesellschaft, on which local Berlin bankers predominated, and the Deutsche Bank, which had bankers from the entire nation: from Crefeld in the Rhineland to Stettin on the Baltic their tentacles covered all Germany. This reflected the national and international role intended for the Deutsche Bank when it was founded on 22 March 1870: to be the banker's bank for foreign transactions, representing the German banking world in international financial markets.[270] The Berliner Handels-Gesellschaft's supervisory board reflected its origin as a universal bank founded by local Berlin private bankers. The Disconto-Gesellschaft's supervisory board shared the parochial character of the Berliner Handels-Gesellschaft, but private bankers (of the type important enough to be members of the Bank des Berliner Kassen-Vereins) were rarely members: instead the Disconto-Gesellschaft's board consisted of merchants, some textile manufacturers, and Prussian civil servants. To give some examples: Meyer Samuel Baswitz (a

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269. Münch, Adolph Hansemann, pp. 72-73; Georg Bernhard, Meister und Dilettanten am Kapitalismus im Reiche der Hohenzollern (Amsterdam, 1936) pp. 219-220; Fritz Seidenzahl, Hundert Jahre Deutsche Bank, 1870-1970 (Frankfurt/Main, 1970) p. 186; Schinckel, Erinnerungen pp. 253-254.

270. Seidenzahl, Deutsche Bank, pp. 8-24.

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member of the supervisory board from 1851 until his death in 1870) is listed in the Berlin 1857 city directory as having a warehouse (Lager) for Silesian and Berlin woollen goods; by 1879 he was a stock broker, an alderman (Ältester) of the Korporation der Kaufmannschaft (the Berlin equivalent of a Chamber of Commerce) and chairman of the Berlin Jewish burial society. C.F. Berg was a partner of the firm J. Ravené Söhne & Co. of Berlin, iron traders, who were related to Adolph von Hansemann through the Kusserow sisters. Other members of the supervisory board are similarly obscure: Julius Kauffmann (apparently no relation to the Jewish textile family) was a partner in the firm Lampe, Kauffmann & Co., pharmacists and dealers in dyes. Eduard Lampson was a Spediteur, a partner in the transport and conveyance enterprise Lampson & Opdenhoff. I have already mentioned the Jewish textile industrialist Moritz Reichenheim.[271]

One very obscure member of the Disconto-Gesellschaft supervisory board, Walther Bauendahl, is worth a little more attention because he seems to have been the go-between who arranged for the National Liberal politician, Johannes Miquel, to become a partner of the Disconto-Gesellschaft in 1869. I believe this was the case because it was through

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271. Allgemeiner Wohnungs-Anzeiger nebst Adress- und Geschäftshandbuch für Berlin, dessen Umgebung und Charlottenburg auf das Jahr 1857. Aus amtlichen Quellen zusammengetragen (Berlin, 1857) pp. 18, 205, 244-245; Adress-Kalender für die Königlich Haupt- und Residenzstädte Berlin und Potsdam auf das Jahr 1870 (Berlin, [1870]) vol. 156 p. 480; Die Korporation der Kaufmannschaft von Berlin. Festschrift zum hundertjährigen Jubiläum (Berlin, [1920]) p. 659; Disconto-Festschrift p. 269; Münch, Adolph von Hansemann, p. 378.

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Bauendahl that Miquel arranged with Adolph von Hansemann to quit as a partner in the summer of 1873, at a time when Miquel was under attack for conflicts of interest; Bauendahl was the Disconto supervisory board member to whom Miquel was closest. The name Bauendahl is extremely rare: the only occurrences I have met with are in Westphalia, where the logical alternative Rauendahl (now a district of the town of Hattingen) is also encountered. Bauendahl may have begun his career in Westphalian heavy industry, and this may be reflected in some of his supervisory board positions. In the Berlin directory for 1857, however, he is listed as having a Kolonialwaarenhandlung: an import-export house with an emphasis on tropical (i.e., colonial) products. Bauendahl sat on the supervisory board of the Disconto-Gesellschaft from 1862 until 1877, and on the board of the Provinzial-Disconto-Gesellschaft from its establishment in 1872. He subscribed for 20,000 thalers worth of the initial issue of shares of the Dortmunder Union, and sat on the Union's administrative board. He also sat on the administrative boards of the Gelsenkirchener Bergwerks-Actien-Gesellschaft and the Mengeder Bergwerks-Actien-Gesellschaft. He was also on the administrative board of the Deutsche Feuer-Versicherungs-Actien-Gesellschaft in Berlin, and, according to Otto Glagau, the supervisory board of the Stärkezuckerfabrik, vormals Carl August Köhlmann in Frankfurt an der Oder. Glagau says that this company was founded in November 1871 but held up after the Crash better than most new companies of this period. Bauendahl was an

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alderman of the Berlin Korporation der Kaufmannschaft, to whom he left a legacy in his will. Bauendahl appears to have been a fairly well-to-do private investor; thus during the reorganization of the Roumanian Railway Company we find him signing for 3000 nominal thalers worth of the 8% preference shares, at a price of 2,219.132 thalers. This was as much as Sal. Oppenheim jr. + Cie. signed for, and half as much as Bleichröder signed for.

When Miquel finally resigned his post as chairman of the supervisory board of the Disconto-Gesellschaft, he also lost his flat in the bank. Since Miquel decided not to run again for the Reichstag, his visits to Berlin became more infrequent, but whenever he did come to Berlin he stayed in Bauendahl's flat in the Markgrafenstrasse. Miquel was a thoroughly political animal, enlisting all his business contacts in his political manoeuvres, and Bauendahl was no exception. He wrote to his fellow National Liberal Friedrich Hammacher about Bauendahl, probably in 1886. Hammacher seems to have been a mutual friend; he may have known Bauendahl from the Ruhr. Miquel wrote:

> "Yesterday I sent you in haste some names Bauendahl took down for the National Liberal party. He was unfortunately sick when I left him, and thus could only take down a few names."

Bauendahl resigned his supervisory board posts in 1877, probably due to ill health; he seems to have died shortly

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after Miquel wrote those lines in 1886.[272]

The other important group on the supervisory board of the Disconto-Gesellschaft was Prussian civil servants, plus the occasional lawyer or politician. There were legal experts, like August Theodor Geppert I (1851-1863). There was the occasional politician: Johannes Miquel (on the board from 1873 until 1876), Dr. Wilhelm Löwe-Calbe (1879-1886); even a later leader of the National Liberal Party, Ernst Bassermann, sat on the board of a Disconto-Gesellschaft affiliate, the Süddeutsche Disconto-Gesellschaft, although in that case the connection arose from his marriage to a Ladenburg, because the Süddeutsche Disconto-Gesellschaft was created in 1905 out of the Mannheim banking house W.H. Ladenburg & Söhne. But these few lawyers and

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272. Walther Bauendahl, Berlin, 21 August 1873 to Miquel in Berlin, Miquel Nachlass; "I shall stay at 50 Markgrafenstrasse": Miquel, Frankfurt, 11 March [1884] to Marquardsen; "I shall stay again with Bauendahl, Markgrafenstrasse 50": Miquel [Frankfurt end of February 1886] to Marquardsen, ZStA Potsdam, Nachlass Marquardsen, Az. 90 Ma 1, Nr. 15, fol. 231, 246; Miquel, Berlin, Tuesday [1886?] to Friedrich Hammacher, ZStA Potsdam, Nachlass Friedrich Hammacher, Az. 90 Ha 5 Nr. 31, fol. 19; Underwriting syndicate for 8% Roumanian Railway preference shares, Bleichröder Archive, Box IX, folder 1; Dortmunder Union: Gründungsprotokoll of the Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund dated Berlin, 2 February 1872, Nr. 48 des Notariats-Register pro 1872, Werksarchiv, Hoesch AG, Az. DHHU 1370; GBAG: Gelsenkirchener Bergwerks-Aktien-Gesellschaft 1873-1913 (Düsseldorf, [1913]), Anlage 5; Mengede: Die Steinkohlenbergwerke der Vereinigte Stahlwerke A.-G. Die Schachtanlage Adolf von Hansemann in Dortmund-Mengede (Essen, 1933) pp. 11-12; fire insurance: Berlin Adress-Kalender 1868, 1869 (Berlin, 1868-1869) vol. 154 pp. 434, 469, vol. 155 pp. 459, 493; Otto Glagau, Der Börsen- und Gründungs-Schwindel in Deutschland (Zweiter Theil von "Der Börsen- und Gründungs-Schwindel in Berlin".) (Leipzig, 1877) p. 195; Berlin Korporation der Kaufmannschaft, pp. 418, 660; Disconto-Festschrift p. 270.

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politicians were dwarfed by the numerous bureaucrats, especially the Geheime Ober-Finanzräthe, who provided a useful conduit to the Prussian Finance Ministry, the Bank of Prussia, and the Seehandlung: men such as Geheimer Ober-Finanzrath Friedrich Wilhelm Alexander von Scheele, Geheimer Ober-Finanzrath Friedrich Wilckens, Geheimer Ober-Finanzrath Scheller, Wirklicher Geheimer Rath Leopold von Schuhmann, Wirklicher Geheimer Rath Otto Wehrmann, and Appellationsgerichts-Vizepräsident a. D. Dr. Ludwig von Rönne.[273] Of these, Otto Wehrmann rose to be the highest ranking Prussian civil servant. Wehrmann's connection with the Disconto-Gesellschaft went back to 1848, when a young Wehrmann had been very impressed by the vigour of David Hansemann in establishing a new Prussian Ministry of Trade; after that he was one of David Hansemann's closest friends. Wehrmann played a crucial role in the negotiations with the Prussian government which led to the formation of the Preussische Central-Bodencredit-Actien-Gesellschaft. He was the banker's vital ally in the enemy camp.[274] Friedrich Wilhelm Alexander von Scheele, in addition to his position as a civil servant, was a member of the directorate of the Berlin-Anhalt Railway Company. In 1873 Scheele was made the

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273. Disconto-Festschrift, pp. 269-272; Rudolf Haas, Die Entwicklung des Bankwesens im deutschen Oberrheingebiet. Zur 100. Wiederkehr des Gründungstags der Rheinische Creditbank Mannheim am 15 Juni 1970 (Mannheim, [1970]) p. 115.

274. [Leo Wehrmann], Aus dem Leben des Wirklichen Geheimen Rats Otto Wehrmann, Ersten vortragenden Rats im Staatsministerium. Blätter der Erinnerung an das Werden des Deutschen Reiches (Stuttgart and Berlin, 1910).

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first President of the Imperial Railway Office (Reichseisenbahnamt), but a bitter controversy surrounding an increase in freight tariffs by 20% eventually led Scheele to resign and resume his post as chairman of the supervisory board of the Disconto-Gesellschaft.[275]

Hermann Münch and Joseph Hansen say in their biographies of Adolph von Hansemann and Gustav Mevissen that bankers liked to hire civil servants because of their correctness and sense of legality.[276] This is no doubt true, but it is not the whole story. At a time when few large organizations existed, civil servants were some of the few men who had experience at managing a large operation. In addition to this, although most of the railways in Prussia were privately owned, a number were government operated (such as the Berg-Mark Railway) or had bureaucrats appointed to their managing directorate (such as the Berlin-Anhalt Railway). This meant that many bureaucrats had a greater experience of the business world than one might otherwise suspect. In the case of the Disconto-Gesellschaft, David Hansemann had originally intended for the bank to be a government sponsored institution, and the bank still retained some of this atmosphere by having old civil servant friends of David Hansemann (like Wehrmann) on the supervisory board. Finally, there is no doubt that one

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275. Rudolf Morsey, Die oberste Reichsverwaltung unter Bismarck 1867-1890 (Münster/Westphalia, 1957) pp. 143-146 (=Neue Münstersche Beiträge zur Geschichtsforschung, vol. 3).

276. Hansen, Mevissen, vol. 1, p. 776; Münch, Adolph von Hansemann, p. 63.

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reason for having men like Scheele and Wehrmann on the supervisory board was because they were very useful allies to have in places like the Prussian Finance Ministry and the Ministry of Trade, where the vital decisions concerning business were made. Wehrmann and Scheele, not politicians like Miquel and Löwe-Calbe (as is erroneously asserted by Helmut Böhme, and even by more careful scholars like Karl-Erich Born),[277] were the Disconto-Gesellschaft's vital contacts.

David Hansemann also had an informal group of friends who could often be just as important contacts as men who sat on the supervisory board. Prominent among these was Julius Scheidtmann, who had begun in 1848 attacking the Prussian government under the pseudonym of Peter Minus and ended as a high official in the Seehandlung. David Hansemann, Julius Scheidtmann, and Otto Wehrmann and their daughters would go horseback riding together, then go bowling, and concluded this pleasant Sunday excursion with a visit to the Bouffes parisiens at Kroll's opera house. Gustav Freytag also names Scheidtmann and Wehrmann as a distinct circle of friends around David Hansemann and Carl Mathy.[278] These civil servants - and not politicians like Miquel - were the important allies of the Disconto-Gesellschaft in government circles. Their obscurity has led them to be unjustly neglected.

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277. Helmut Böhme, Deutschlands Weg zur Grossmacht (Cologne, 1966) pp. 315-316; Born, Geld und Banken, p. 156.

278. Münch, Hansemann, p. 382; Gustav Freytag, Karl Mathy. Geschichte seines Lebens (Leipzig, 1870) pp. 376-377.

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Much space in the literature about the Disconto-Gesellschaft is taken up with the allegations, first made by anti-Semitic muckrakers of the 1870's like Otto Glagau, Rudolph Hermann Meyer, Heinrich-Joachim Gehlsen, and their epigoni like Hermann Ahlwardt and Rudolf Plack-Podgórski, that Johannes Miquel, one of the most powerful leaders of the National Liberal Party, used his political influence when he was a partner in the Disconto-Gesellschaft to advance the bank's own interests. I do not have the space to go into these charges in detail, but after examining what evidence is available I must adopt the opinion of Eduard Lasker that the one proposal advocated by Miquel where he clearly seems to be acting in the interest of the Disconto-Gesellschaft is his attempt to prevent premium (lottery) loans being declared illegal. The Disconto-Gesellschaft wished to have premium loans declared legal, so that the Preussische Central-Bodencredit-Actien-Gesellschaft could issue premium Pfandbriefe, like its French model the Crédit Foncier. Characteristically, Miquel did not succeed in preventing the Reichstag outlawing premium loans.[279] The other allegations fall down because very few matters in which the Disconto-Gesellschaft was interested were decided in the Reichstag or in the Prussian diet; they were decided by ministers and civil servants.

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279. Julius Heyderhoff and Paul Wentzcke, Deutscher Liberalismus im Zeitalter Bismarcks: Eine politische Briefsammlung (Bonn and Leipzig, 1926) vol. 2. p. 159; the debate about premium loans may be followed in the Stenographische Berichte.

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G. Conclusion.

The Disconto-Gesellschaft was the creation of a man whom I must describe as a genius: David Hansemann. Every stage of the bank's development under Hansemann's leadership was marked by outstanding innovations: the Kommanditgesellschaft auf Aktien, Partialobligationen, the introduction of mortgage banking to Prussia. Not only was David Hansemann a skillful financial innovator, he was a master strategist, as witnessed by his incredible campaign of 1859 and his long wars against his rival bankers until they accepted him as their equal. After David Hansemann's death in 1864, the control of the bank passed to the less inspired hands of Adolph Hansemann. He cannot be described as a success, and under him the Disconto-Gesellschaft steadily lost ground to its younger rivals, the Deutsche Bank and the Dresdner Bank. Significantly, it was in the terrible year of 1876, when the Disconto-Gesellschaft was paying the penalty for its misdeeds of the Gründerjahre, that the Deutsche Bank's turnover passed that of the Disconto-Gesellschaft. Locked into unfortunate investments like the Dortmunder Union and the Mengeder Bergwerks-Actien-Gesellschaft, partly because of Adolph von Hansemann's stubbornness, the Disconto-Gesellschaft fell further behind. By the period 1923-1929, the Disconto-Gesellschaft had fallen to fourth place after the Darmstädter-Nationalbank, the Deutsche Bank, and the Dresdner Bank. There is, however, an interesting remark made by Dr. h. c. Hermann Josef Abs which places this decline in a different context. Abs said

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in a lecture delivered in 1977 that one of the reasons for the Deutsche Bank's merger with the Disconto-Gesellschaft in October 1929 was because the Disconto-Gesellschaft had been more cautious in acquiring new business during the nineteen-twenties and thus had stronger reserves than the Deutsche Bank did.[280] If the merger had not gone through, it is possible we would draw a very different conclusion about the relative strengths of the big German banks, with the laggard Disconto-Gesellschaft surviving the 1931 crisis best because of its reserves. The "reverse takeover" by the Disconto-Gesellschaft partners of the Deutsche Bank after 1929 does indicate that the Disconto-Gesellschaft, in spite of its apparent decline, harboured great management talents; in fact, one Disconto-Gesellschaft partner, Franz Urbig, hired a young man of promise for the new merged company: Hermann Josef Abs. Remarkably, the other great banker of the Bundesrepublik, Dr. h.c. Robert Pferdmenges, worked at the Disconto-Gesellschaft affiliate Schaaffhausen until the merger of 1929.

Whether the Disconto-Gesellschaft did or did not decline during the Weimar Republic is a question which I

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280. Seidenzahl, Deutsche Bank, pp. 312-324; Manfred Pohl, "Der Zusammenschluss der Deutschen Bank und der Disconto-Gesellschaft im Oktober 1929" in: Beiträge zu Wirtschafts- und Währungsfragen und zur Bankgeschichte (Frankfurt/Main, January 1980) Nr. 18; Dr. h.c. Hermann Josef Abs, "Konzentrationsbestrebungen im deutschen Bankwesen" in: Die Konzentration in der deutschen Wirtschaft seit dem 19. Jahrhundert. Referate und Diskussionsbeiträge der 2. öffentlichen Vortragsveranstaltung der Gesellschaft für Unternehmensgeschichte e.V. am 28 Juni 1977 in Köln (Wiesbaden, 1978) p. 46 (= Zeitschrift für Unternehmensgeschichte, Beiheft 11).

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cannot fully answer, because so many different factors could make or break a bank during those years: a hesitation of a few months before buying dollars during the inflation, high taxation, truculent trade unions, pension costs. There can be no question, however, that the Disconto-Gesellschaft did decline relative to the Deutsche Bank and the Dresdner Bank after 1873; and even in relation to the Berliner Handels-Gesellschaft after 1883. The flaws of Adolph von Hansemann and the very bureaucratic style of management all contributed, in my opinion, to this decline. Like Germany itself, the Disconto-Gesellschaft was the creation of one genius, upon whom everything depended; and after the genius passed from the scene, the bank declined under his epigoni.

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III. Investments in Iron and Steel, First Part: the Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund.

The Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund - or the Dortmunder Union, as it was known for short - was the largest industrial venture of the Disconto-Gesellschaft during the Gründerjahre. It was also the most disastrous. Founded in 1872, it was formed out of three firms: the Henrichshütte of Welper (now part of Hattingen), the Berg- und Hütten-Actien-Verein Neuschottland of Steele (now part of Essen), and Dr. Bethel Henry Strousberg's Dortmunder Hütte. Krupp chose three rings as his trademark, to symbolize his seamless steel railway tyres; the Union chose three "U"s in a circle to symbolize the unification of three separate works. The trademark outlasted this unification, since it was adopted by Stinnes' Deutsch-Luxemburgische Bergwerks- und Hütten-Gesellschaft, by the Vereinigte Stahlwerke, and by the Dortmund-Hoerder Hüttenunion. The trademark was more successful than the firm it represented.

A. The Henrichshütte, 1853-1872.

The Henrichshütte owed its establishment, and its peculiar spelling of the name "Heinrich", to Count Henrich zu Stolberg-Wernigerode. The counts of Stolberg-Wernigerode possessed numerous mines and smelters for silver, copper, and iron in the Harz mountains. But by the end of the 1840's their chief reserves in the Harz were giving out. So they decided to look elsewhere for new mining opportunities, and ended by acquiring iron ore and coal

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claims around Hattingen, on the southern shore of the river Ruhr. At first it seemed that Ruhr was doubly blessed with coal and iron ore, in particular blackband, an ore which contains both minerals. These iron ore deposits, however, did not outlast the 1860's, and the ironworks which had come for the iron ore stayed for the coal.

Count Henrich died in 1854, and the guardians of the young Count Otto were at first willing to continue the project; but costs soared. By the spring of 1856 no less than 1.2 million thalers was tied up in the plant, and the guardians worried about so much money being tied up in one venture. In the late spring of 1856 they entered negotiations with David Hansemann, and on 28 February 1857 a contract was signed, effective the following day: the Disconto-Gesellschaft bought the Henrichshütte for 2 million thalers.[1]

Unfortunately, the profits from the ironworks by no means lived up to the bank's expectations. The net profits were:

Net profits from the Henrichshütte, 1857-1862

(in thalers)

1857	89,235	1860	50,326
1858	76,484	1861	43,853
1859	14,104	1862	18,119

SOURCE: Däbritz, Disconto-Gesellschaft, p. 104.

The average was 48,687 thalers, or a return of 1.09% on the Henrichshütte's capital of 2,327,718 thalers; in the best year, 1857, the return was still only 3.83%, in the

1. Ein Jahrhundert Henrichshütte. Hattingen 1854-1954 pp. 21-34.

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worst year, 1859, 0.6%. The Disconto-Gesellschaft let this abscess continue to bleed for so long because it expected everything to change for the better once it had installed new blast furnaces, rolling and puddling works. Yet this did not happen: 1862 was almost as bad as the crisis year of 1859. The Henrichshütte, in the words of Walther Däbritz, had become the first sickly child (Schmerzenskind) of the Disconto-Gesellschaft.[2]

For David Hansemann, the problems of the Henrichshütte must have been especially irritating in contrast to the situation of the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb. The Phoenix, the largest iron manufacturer in Germany in the eighteen fifties, over-expanded during the boom and was on the verge of collapse by the end of the decade. David Hansemann intervened, carried out a very severe and very successful reorganization, and set the company back on the road to health with his measures of 1859-1860. The Phoenix began to prosper again almost immediately: in 1860/1861 it paid a dividend of 6% on the class "A", in 1861/1862 7%, in 1862/1863 7½%. The company experienced a "V" curve: one moment it was hurtling towards the abyss, the next moment rising back to prosperity.[3] Now David Hansemann was experiencing troubles with an ironworks

2. Walther Däbritz, Gründung und Anfänge der Disconto-Gesellschaft, Berlin. Ein Beitrag zur Bank und Wirtschaftsgeschichte in den Jahren 1850 bis 1875 (Munich and Leipzig, 1931) pp. 104-105.

3. Oskar Stillich, Eisen- und Stahl-Industrie (Berlin, 1904) pp. 146-149 (=Nationalökonomische Forschungen auf dem Gebiete der grossindustriellen Unternehmung, vol. 1).

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wholly owned by his very own bank; an ironworks, moreover, in which nearly a quarter of the capital of his bank was locked up. He thereupon embarked upon the second part of his great triptych of reorganizations of the eighteen-sixties: the first had been the Phoenix, the third would be the colliery "Vereinigte Präsident".

David Hansemann acknowledged that the Henrichshütte was a "fetter for the future" of the Disconto-Gesellschaft. He therefore decided that the Disconto-Gesellschaft would convert the 2,327,718 thalers in its balance sheet from an equity investment into an interest-bearing loan. Under an agreement of 7 December 1863 agreed between the Disconto-Gesellschaft and David and Adolph Hansemann, the Henrichshütte was to repay this with forty-four semi-annual payments of 54,545 thalers beginning the 30 June 1864; until this was fully paid off, the total amount was to be secured by a mortgage on the Henrichshütte. The Disconto-Gesellschaft calculated that it had invested 1.3 million thalers in the Henrichshütte and the ironworks would require some 450,000 thalers in working capital. So it re-capitalized the Henrichshütte as a Kommanditgesellschaft with a capital of 1.75 million thalers. Of this, the Disconto-Gesellschaft took 1.52 million thalers; the active partners of the Disconto-Gesellschaft, David and Adolph Hansemann, immediately took 230,000 thalers, and from the end of 1864 they promised to accept Henrichshütte shares valued at par in lieu of half of their profits as partners until their investment in the Henrichshütte rose to 730,000

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thalers. Even Otto Lindenberg, who loses almost no chance to criticize the Hansemanns and the Disconto-Gesellschaft, has described this as a very noble act of self-sacrifice on the part of the Hansemanns. David Hansemann felt that he was to blame for the mistake of investing in the Henrichshütte; and he volunteered for a cut in his pay packet. He displayed a very high standard of commercial morality.[4]

By 1869, the Henrichshütte was prospering so well that the Disconto-Gesellschaft decided to convert it into a public limited company (Actien-Gesellschaft). The statute of the new company was drawn up by the bank's Procuristen on 20 March 1869 and the concession granted by the Prussian government on 12 April 1869. The share capital was $2^1/_2$ million thalers. The administrative board consisted of the merchant Walther Bauendahl; Meyer Samuel Baswitz, here described as a rentier; Adolph Hansemann; the merchant Julius Kauffmann; and Friedrich Wilhelm Alexander von Scheele. A further three members were to be co-opted; the only name I know of is that of Johannes Miquel, who joined the administrative board of the Henrichshütte after he became a partner of the Disconto-Gesellschaft on 29 November 1869. The directorate (Direction) was made up of three men: the merchant Franz Joseph Landvogt; the retired court assessor (Gerichts-Assessor a. D.) Wilhelm Rosendahl; and the engineer Hermann Tappe, all with their domicile at the

4. Die Disconto-Gesellschaft 1851 bis 1901. Denkschrift zum 50 jährigen Jubiläum (Berlin, 1901) p. 158; Däbritz, Disconto-Gesellschaft, pp. 112-113; Otto Lindenberg, 50 Jahre Geschichte einer Spekulationsbank. Ein Beitrag zur Kritik des deutschen Bankwesens (Berlin, 1903) pp. 13-15.

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Henrichshütte. Rosendahl was later a member of the directorate of the Dortmunder Union; but the figure I consider most important is Franz Joseph Landvogt. Landvogt was a member of the powerful committee of the administrative board of the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb at least from 1861 to 1870, probably longer. This committee of four members - in 1870, the other three were Julius the Losen of Eupen, the banker Albert Freiherr von Oppenheim, and the lawyer Robert Esser II - met frequently with the directors of the Phoenix to decide all important technical decisions. Presumably David Hansemann noticed Landvogt's talent whilst he was reorganizing the Phoenix, and he or his son brought Landvogt over to the Henrichshütte. Landvogt must have been advanced in years - in the Phoenix literature, he is usually described as a rentier - but his wide experience was useful for the Henrichshütte. Landvogt's active role in two of the largest, presumably competing, iron manufacturers of Rhineland-Westphalia is curious. The situation was not unique at this period. Gustav Mevissen believed that companies should try and settle their conflicts in a friendly (and informal - he was not necessarily an advocate of cartels) fashion, and had interlocking directorates on the Rhenish Railway and the Cologne-Minden Railway, on the Hoerder Verein and the Bochumer Verein für Bergbau und Gussstahlfabrikation. But the situation was still unusual: even the fluent Mevissen had to give up the Bochumer Verein and Cologne-Minden Railway posts because of conflicts of

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interest.[5]

Unfortunately the dividends of the Henrichshütte experienced a steady decline. For 1868, the ironworks paid 8%; for 1869, 6½%; for 1870, only 3½%. But we cannot say outright that the new Henrichshütte in its public limited company form was a failure since precisely in those years the company embarked upon extensive and necessary investment. It bought numerous iron ore mines in Siegerland and in Nassau; it also built a Bessemer steelworks with two converters, which was completed in 1872.[6] Whether the Henrichshütte would have been successful on its own or not, however, must remain a moot point; because in 1872 it merged with the Dortmunder Hütte and Neuschottland to form the Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund.

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5. "Akten Betreffend die Actien-Gesellschaft Henrichshütte bei Hattingen" in: ZStA Merseburg, Rep. 120, A XII 7, Nr. 106, fol. 5; Berliner Börsen-Zeitung (Berlin, Thursday evening, 10 June 1869) No. 264, Erste Beilage p. 7; [Rudolph Hermann Meyer], "Herrn Lasker's angebliche Gründlichkeit: Eine Abwehr" in: Berliner Revue. Auf Wacht an der Mosel. Revue der politischen, sozialen und kirchlichen Fragen der Gegenwart (Berlin, 4 March 1873) vol. 72, Heft 9, p. 266; Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb, Administrative Board Meeting, Laar, 18 February 1861 and committee meeting, Laar, 24 January 1870, Mannesmann-Archiv, Az. P 1 25 37. 1; Joseph Hansen, Gustav von Mevissen. Ein rheinisches Lebensbild 1815-1899 (Berlin, 1906) vol. 1, pp. 774-776.

6. Henrichshütte 1854-1954 p. 38; Will Rinne, Die Entwicklung der Ruhrstahl Aktiengesellschaft und ihrer sechs Werke (1937) pp. 191, 197 (I wish to thank the archivist of Thyssen AG, Dr. Carl-Friedrich Baumann, for sending me a copy of this); share prices are from Der Aktionär.

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B. The Foundation of the Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund.

1. The Dortmunder Hütte and Neuschottland.

The immediate occasion for the formation of the Dortmunder Union was the collapse of the railway empire of Dr. Bethel Henry Strousberg. From 1868 onwards Strousberg acquired numerous heavy industrial assets, hoping to become self-sufficient in railway materiel. From a technical viewpoint, Strousberg's ramshackle empire never could have worked. It was too dispersed. His iron ore was mined at Gross-Döhren in the Harz, and then smelted at nearby Othfresen; it was not too difficult to transport this pig iron to the Neustädter Hütte, which was to make plate for Strousberg's locomotive works at Linden near Hannover (formerly the property of Georg Egestorff) and for a bridge-building division, which Strousberg had added to the Dortmunder Hütte; but the pig iron and the plate had to be carried to Dortmund for further working. The Dortmunder Hütte was to make wheels and large iron parts which then had to be transported back to Lower Saxony. Finally, Linden was to manufacture the locomotives. Strousberg did carry out very extensive additions and technical modifications to his works after he acquired them: all the works vastly increased their capacity. His most important addition was his establishment of the bridge-building works in Dortmund; originally intended to construct bridges for Strousberg's Roumanian railways, Dortmund remained an important centre of bridge-building long after Strousberg had left the scene. Yet often he carried out huge expansion programmes in places

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ill-suited to make the products he needed. For example, the Harz iron ore was extremely difficult to work and virtually useless for steel, yet Strousberg built a large Bessemer works at Dortmund. Only the experiments at the Hermann-Goring-Werke in the 1930's would solve the problems of smelting Central German iron ore.[7]

The Union commenced life with a diseased pedigree. The Strousberg empire which it took over did not fit together and many of the plants were technically inadequate. One of the most astonishing points, however, is that Strousberg was able to delude such shrewd financiers as Adolph Hansemann and Friedrich Grillo into believing that the Dortmunder Hutte was a more valuable property than the Henrichshütte or Neuschottland, since it entered the Union capitalized at 3 million thalers, rather than the $2^1/_2$ million thalers allotted for the Henrichshutte and Neuschottland. Yet the official figures published in the Zeitschrift für das Berg-, Hütten- und Salinen-Wesen show that the production of the Dortmunder Hutte was substantially lower than that of the Henrichshütte and the Horst works of Neuschottland, both by volume and by value - at least 30% lower in the case of the former. The figures below are for finished iron products, such as bar iron, castings, and plate; pig iron is not included, because the Dortmunder Hütte did not have blast-

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7. "Allgemeine Eisenbahnbau-Gesellschaft in Berlin" in: Der Aktionär. Zentralorgan für den Mobiliar-Besitz (Frankfurt/Main, Sunday 27 November 1870) vol. 17, No. 883, p. 758; Walther Däbritz and Erich Metzeltin, Hundert Jahre Hanomag (Düsseldorf, 1935) pp. 57-62; Festschrift zur Hundertjahrefeier der Dortmund-Hörder Hüttenunion Aktiengesellschaft 1852-1952 (Dortmund, 1952) pp. 50-54.

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furnaces before 1872, but it is worth remembering that the Horst figures in terms of value do not take into account the value of products of Neuschottland's other works at Hasslinghausen and Aplerbeck.

		Horst	Henrichshütte	Dortmund
1869:	Amount (t)	31,649.45	26,295.05	17,694
	Value (tlr)	1,878,713	2,065,868	1,111,270
1870:	Amount (t)	32,368.35	24,949.65	17,500
	Value (tlr)	1,942,134	1,507,364	1,050,000
1871:	Amount (t)	34,146.55	30,762.3	18,000
	Value (tlr)	2,486,546	2,427,304	1,230,000

NOTES: Amount in tonnes, value in thalers.
The source for the 1870 and 1871 production figures of Dortmunder Hütte rounded the figures, but this does not affect my argument since if anything this rounding would err on the side of generosity.
SOURCE: Zeitschrift für das Berg-, Hütten-, und Salinen-Wesen, 1870-1872.

I would argue that based on the production figures, the Dortmunder Hütte should have been capitalized at $1^1/_2$ to 2 million thalers, instead of 3 million thalers; it was over-capitalized by 50 to 100%. Grillo and Hansemann seem to have made the serious mistake of assuming that the Dortmunder Hütte was worth what Strousberg said, instead of arriving at a figure of their own. This was the third part of the diseased pedigree of the Strousberg works: they were over-capitalized.

The other major components of the Union, besides the Henrichshütte, were the colliery "Glückauf-Tiefbau", which was an acquisition which Strousberg had put in his wife's name; and the Berg- und Hütten-Actien-Verein Neuschottland. When the Disconto-Gesellschaft formed the Dortmunder Union, it called upon the great Ruhr speculator and industrialist Friedrich Grillo to assist in its formation, and Grillo

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brought in Neuschottland, in which his wife's family, the von Borns, had a major interest. Many writers, like Leland H. Jenks and Kurt Bloemers, have assumed that the name Neuschottland meant that this ironworks was backed by British investors. Karl Mews, who has done a very thorough study of the history of Neuschottland, has concluded that there is no evidence of any British investment in this ironworks. Mews argues that the company was called Neuschottland because of the blackband, to show that the Ruhr was just as rich in mineral deposits as Scotland. Mews did not, however, know of an article in the English Mining Journal, which mentioned Neuschottland as an attractive investment. It would be surprising if this article led to no interest from British investors; but on the other hand, there are no apparent representatives of British capital on the administrative board, so no doubt Mews is correct when he says that most of the money was raised locally, from Westphalia and the county of Mark.[8]

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8. "Mining and Ironworking in Prussia, No. 5" in: The Mining Journal, Railway and Commercial Gazette, Forming a Complete Record of the Proceedings of all Public Companies (London, Saturday 3 January 1857) vol. 27, No. 1115, Supplement p. 20; Mining Journal (London, Saturday 10 January 1857) vol. 27, No. 1116, p. 31; Leland Hamilton Jenks, The Migration of British Capital to 1875 (New York, 1927) p. 390 note 74; Kurt Bloemers, William Thomas Mulvany (1806-1885). Ein Beitrag zur Geschichte der Rheinisch-Westfälischen Grossindustrie und der deutsch-englischen Wirtschaftsbeziehungen im 19. Jahrhundert (Essen, 1922) pp. 57-58 (= Veröffentlichungen des Archivs für Rheinisch-Westfälische Wirtschaftsgeschichte (Rheinisch-Westfälisches Wirtschaftsarchiv) vol. 8); Histories of Neuschottland: Karl Mews, "Friedrich Grillo und Neuschottland" in: Beiträge zur Geschichte von Stadt und Stift Essen (Essen, 1955) Heft 70, pp. 53-69; Karl Mews, "Hasslinghauser Hütte-Neuschottland-Dortmunder Union - Eisenwerk Steele. Ein Jahrhundert Werksgeschichte, 1856-1956" in: Beiträge zur Geschichte von

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The news that Neuschottland was to merge into the Union was well kept; when the news leaked out, Wilhelm Heinrich Müller, the General Director had fewer shares than he would have liked. He wrote to his father on 10 February 1872:

> "The negotiations were . . . so much in doubt, that I could not even buy some Neuschottland shares - of which anyway there were none in the market. The new capital has been entirely subscribed by the bank institutions concerned, so there is nothing one can get there. The Dortmunder Hütte, Othfresen, Glückauf, etc., everything is going into the new company at the price acquired, so that the only way the bank institutions can profit is through holding the shares of the new capital, or rather through the agio on the shares."

The banks were loth to give up any of their shares, because to do so meant to reduce their profits. It is curious that Friedrich Grillo did not tip Müller off as to what was going to happen, especially because Grillo and Müller were very close. It is edifying, however, to discover that even Grillo, who was often regarded by contemporaries as a not wholly respectable wheeler-dealer, did not tip off his managers so they could profit from insider speculation.[9]

2. The Founders of the Union

The Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund was founded in Berlin on 2 February 1872. It is commonly known as the Dortmunder Union, and should not be confused with the beer of the sam

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Stadt und Stift Essen (Essen, 1956) Heft 71, pp. 3-57; [Karl W. Boetticher], Neuschottland - Eisenwerk Steele.100 Jahre 1856-1956 (Dortmund, 1956).

9. Hans-Carl Scheibler and Karl Wülfrath, Westdeutsche Ahnentafeln (Weimar, 1939) vol. 1 p. 217 (=Publikationen der Gesellschaft für Rheinische Geschichtskunde, vol. 44); Mews, "Neuschottland 1856-1956" p. 29.

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name: the Dortmunder Union brewery was founded at around the same time. "Union" was a popular name in this period, and many companies in unrelated lines of business chose to adopt it (e.g. the Union-Electricitäts-Gesellschaft, the Westfälische Union, and the Harzer Union). The initial capital was 11 million thalers; the founders and subscribers for the first tranche of 5 million thalers were:[10]

1. Friedrich Grillo, factory owner Essen... 20,000 thalers
2. Wilhelm von Born, banker, Dortmund..... 20,000 thalers
3. Geheime Ober-Finanzrath Friedrich Wilhelm Alexander von Scheele, Berlin..... 20,000 thalers
4. Gustav Lehrkind, merchant, Haspe ..... 20,000 thalers
5. Peter Caspar Schulte, merchant, Gevelsberg 20,000 thalers
6. Walther Bauendahl, merchant, Berlin..... 20,000 thalers
7. Commercienrath Julius Kauffmann, Berlin... 20,000 thalers
8. Geheime Commercienrath Adolph Hansemann, Berlin, for himself..... 20,000 thalers
9. Johannes Miquel, retired lord mayor, Berlin, for himself..... 20,000 thalers
10. Freiherr Mayer Carl von Rothschild, head of the banking firm M. A. von Rothschild & Söhne, Frankfurt am Main.....1,000,000 thalers
11. Freiherr Abraham von Oppenheim, head of the banking firm Sal. Oppenheim jr. + Cie, Cologne..... 600,000 thalers
12. Hansemann and Miquel on behalf of the Provinzial-Disconto-Gesellschaft of Berlin.....1,000,000 thalers
13. Rechts-Anwalt a. D. Adolph Salomonsohn and the banker Emil Hecker on behalf of the Direction der Disconto-Gesellschaft of Berlin..... 2,070,000 thalers
14. Max Jacob Frensdorff on behalf of the Kommanditgesellschaft M. J. Frensdorff, Provinzial-Disconto-Gesellschaft..... 150,000 thalers

Total: 5,000,000 thalers

We have already encountered some of these investors before. Peter Caspar Schulte and Gustav Lehrkind had been among the

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10. "Acta betreffend die General-Versammlung vom 2. February 1872 (Konstituierende General-Versammlung) mit Statut", Hoesch AG, Werksarchiv, Az. DHHU 1370.

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founders of Neuschottland. Max Jacob Frensdorff was the director of the Hannover branch of the Provinzial-Disconto-Gesellschaft, and was later largely responsible for that company's collapse. Two important financiers who deserve more attention are Friedrich Grillo and Wilhelm von Born.

3. Friedrich Grillo

Friedrich Grillo was born in 1825 to a family originally from the Grisons area of Switzerland - hence the Italian name. In 1850 he married Wilhelmine, the daughter of Theodor von Born. The von Borns had numerous interests throughout the Ruhr. Grillo set himself up as an iron merchant in Essen and began to dabble in mining investments. During the boom of the 1850's Grillo helped found the Bergwerksgesellschaft Neuessen, the Magdeburger Bergwerksverein at Wanne, the coal mine "Hercules" in Essen, the coal mine "Zentrum" in Wattenscheid and the coal mine "Caroline" in Holzwickede. What set Grillo apart from the mass of speculators, however, was that he kept his belief in the future of coal and the greatness of the Ruhr throughout the dark days that followed 1857; and when better times returned to the Ruhr at the end of the 1860's, Grillo had a reputation as a coal mining seer. Strousberg has expressed it very well in an Old Testament simile: "Grillo's career was like that of Abraham's; he was blessed because he believed".[11] Grillo began by merging a number of smaller mines which had been suffering after 1857 into a larger,

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11. Bethel Henry Strousberg, Dr. Strousberg und sein Wirken (Berlin, 1876) p. 86.

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more cost-effective enterprise: the gigantic mine "Consolidation" in Schalke, founded in 1863 which has remained one of the largest and most profitable Ruhr collieries to the present day. In 1868 he helped found another colliery, the Gewerkschaft Graf Bismarck; and Grillo achieved his peak of activity during the Gründerjahre, when he founded the Essener Bergwerksverein Konig Wilhelm, the Gewerkschaft Unser Fritz in Wanne (now part of Herne), the gigantic Gewerkschaft Monopol in Kamen, and the Gewerkschaft Victor in Rauxel. In 1873 Grillo also acquired some coal-mining rights in the Ruhr's far east, by purchasing the saltworks Königsborn from the Prussian state. He originally intended to close down the salt and brine works and just mine the coal, but the sudden collapse of the coal market in 1874 made him think better of this idea. In fact, the production of salt and brine helped save the operation, because the market for these products held up better after 1874 than the market for coal. Königsborn only began to mine coal in 1880; and as the salt deposits were gradually exhausted, the coal production rose to keep up the operation's profits. Königsborn was one of those rare instances of true synergy, where the combination of two enterprises in unrelated fields resulted in a more healthy enterprise. This was partly because the markets for coal and salt moved in opposite directions after 1874; but it was also because it takes more than one tonne of coal to produce a tonne of salt by boiling brine. At Königsborn Grillo found the synergy which eluded him at the Dortmunder

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Union.

Grillo helped found two major enterprises with the Disconto-Gesellschaft during the Gründerjahre: the Dortmunder Union in 1872 and the Gelsenkirchener Bergwerks-Actien-Gesellschaft in 1873 (which will be the subject of Chapter five). Grillo, however, did not like to be bound to any single bank in particular and loved playing banks off against each other: thus with the help of the Barmer Bank-Verein von Hinsberg, Fischer & Co. Grillo converted the banking house of his wife's cousin, Ludwig von Born in Essen, into the Essener Credit-Anstalt in 1872. Grillo thereby created what would become the Ruhr's premier bank, with a hegemony of finance for Rhenish-Westphalian industry which would not be challenged by the Berlin banks until the twentieth century. Grillo's greatest achievements were perhaps all constructed in the small area of Schalke: the founding of "Consolidation" in 1863 was followed by the establishment of a plate-rolling mill by Grillo and his partner Friedrich Funke, the Blechwalzwerk Grillo, Funke & Co. in 1866. 1869 saw Grillo's brother, Wilhelm Heinrich Grillo, establish a factory to make hempen and wire ropes; and at the peak of the Gründerjahre, in 1872, Friedrich Grillo founded the Schalker Gruben- und Hüttenverein, the Actien-Gesellschaft für chemische Industrie, and the Schalker Glas- und Spiegel-manufactur. Grillo also built gas and water works, and workers' housing. The most notable of these ventures is the Schalker Gruben- und Hüttenverein, because when it ran into trouble after 1873 Grillo

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eventually called upon a very talented young man to reorganize this venture: August Thyssen. The Schalker Verein ultimately merged into Kirdorf's Gelsenkirchener Bergwerks-Actien-Gesellschaft in 1903-1905.[12]

Friedrich Grillo is as important a man in the history of the Ruhr as the other great entrepreneurs: Alfred Krupp, Louis Baare, Emil Kirdorf, August Thyssen, and Hugo Stinnes. Unlike Krupp, Baare, Kirdorf, and to a lesser extent Thyssen and Stinnes, Grillo did not choose to be identified with a single enterprise throughout his career. A contemporary observer, the coal technician Bruno Schulz-Briesen, noted how Grillo could cold-bloodedly separate himself from and sell off his creations of the day before; and that he particularly enjoyed surprising the world with these

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12. The main biography of Grillo is T[oni] Kellen, Friedrich Grillo. Lebensbild eines Grossindustriellen aus der Gründerzeit (Essen, 1913) (=Die Rheinisch-Westfälische Industrie. Lebensbilder der bedeutendsten Industriellen und Kaufleute und Darstellung ihrer Unternehmungen vol. 1: Friedrich Grillo.) Walther Däbritz wrote an essay on Grillo which he republished in numerous forms: Walther Däbritz, "Friedrich Grillo als Wirtschaftsführer. Vortrag, gehalten am 17. Januar 1926 aus Anlass der Feier der 100 jährigen Wiederkehr seines Geburtstages" in: Beiträge zur Geschichte von Stadt und Stift Essen (Essen, 1926) Heft 43 pp. 317-333; Walther Däbritz, Unternehmergestalten aus dem rheinisch-westfälischen Industriebezirk: Friedrich Krupp und Franz Dinnendahl, Friedrich Harkort, Friedrich Grillo (Jena, 1929) pp. 30-45 (= Schriften der Volkswirtschaftlichen Vereinigung im rheinisch-westfälischen Industriegebiet, Heft 6); Walther Däbritz "Friedrich Grillo" in: Rheinisch-Westfälische Wirtschaftsbiographien (Münster/Westphalia, 1937) vol. 2, pp. 68-86; similar accounts may be found in Däbritz' histories of the Essener Credit-Anstalt and the Disconto-Gesellschaft; the best summary is Barbara Gerstein, "Friedrich Grillo" in: Neue Deutsche Biographie (Berlin, 1966) vol. 7 pp. 68-69.

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transactions.[13] Grillo's pronounced love of speculation, his fondness for wheeling and dealing, led other industrialists to look askance at him; this distrust comes out very clearly in a letter of Alfred Krupp to his London agent Longsdon. Grillo's partner Friedrich Funke had the rights to a new design of furnace; Krupp refused to enter into negotiations for this, explaining why in his marvellous brand of English:

> "There is another reason for it. The associate of Mr. Funke, a certain Mr. F. Grillo, who is much engaged in enterprises, who is very clever and cunning and from whom I kept hitherto away, would use the occasion of approaching and this is what I whish [sic] to avoid too."

These misgivings were shared by some elements within the Prussian bureaucracy, who resisted admitting Ernst Lindemann, a Rhenish-Westphalian municipal politician to the Prussian House of Lords because he was Grillo's Procurist. In short, Grillo was an entrepreneur with many diverse talents and interests, but this very diversity made him seem too clever, too cunning, too much of a speculator for the more staid and respectable parties in Rhineland-Westphalia.[14]

4. Wilhelm von Born

To a certain extent we may regard the other important founder of the Dortmunder Union, the Dortmund private banker

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13. B[runo] Schulz-Briesen, 50 Jahre rückwärts. Erinnerungen eines alten Bergmannes (Essen, 1904) p. 23.

14. Alfred Krupp, 4 August 1875 to Longsdon in: Alfred Krupps Briefen und Niederschriften vol. 14: 1875 fol. 323 in: H. A. Krupp; Mews, "Grillo und Neuschottland," pp. 62-68.

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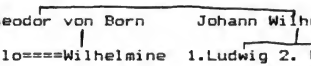
Wilhelm von Born, as an appendage of Friedrich Grillo; Grillo came up with the new projects, Wilhelm von Born mobilized the finance and a widespread network of friends and relations to float these projects.

Family Tree of the Grillos and von Borns



The von Born family comes from Lünen, a small town to the north of Dortmund and west of Hamm, which was important in the early nineteenth century because of its position as a ferry on the River Lippe; it was also a centre for Lippe shipping. The von Born family made a number of strategic marriages: Wilhelm von Born's mother was a Barop, a family which had extensive property around Dortmund and was interested in several coal mines. Wilhelm von Born's wife was daughter of the wine wholesaler Wilhelm Daniel Stade, which provided Wilhelm von Born with the connection to commercial capital, a sector of early capital accumulation which could supply the funds for industrial investment. Wilhelm von Born's father, Johann Wilhelm von Born, had been one of the founders of an ironworks in Lünen, the Westfalia-Hütte. Wilhelm von Born moved to Dortmund at the beginning of the 1850's, and in 1853 set up a private bank with his uncle Wilhelm Schultz. Wilhelm von Born was very active during the boom of the 1850's, when he founded the collieries "Borussia" and "Tremonia" as well as the Bochumer Verein für Bergbau und Gusstahlfabrikation and Neuschottland. In 1855 he helped found a private note-

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issuing bank, the Dortmunder Privatbank. In 1863 Wilhelm's elder brother, Ludwig von Born, followed his example and established a private bank in Essen (which became the Essener Credit-Anstalt in 1872); the youngest of the three brothers, Carl von Born, set up a blast-furnace works in Dortmund in 1865 with his brother's help. Wilhelm von Born was also behind the formation of the Dortmund-Gronau-Enschede Railway Company, a venture where he was able to call upon the assistance of the Disconto-Gesellschaft (the railway was never especially successful). Von Born was very active in the Dortmund Chamber of Commerce. He helped to found it in 1863 and was vice-president of the Chamber of Commerce from 1863 until 1876, and president from 1876 until 1885. He was also a member of the Prussian economic council (the Volkswirtschaftsrat, established by Bismarck as a sort of shadow parliament) and the Prussian state council. Von Born made the Chamber of Commerce follow an extreme protectionist course; in fact, it had been the reluctance of the Chamber of Commerce's first president, the brewer Wilhelm Overbeck, to advocate protection which had led to his replacement by Wilhelm von Born. Von Born partly advocated protection because of his position at the Dortmunder Union, where he was vice-chairman of the administrative board from 1872 until 1885. In 1885, however, his bank collapsed, and von Born was compelled to retire from the Chamber of Commerce and from the Dortmunder

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Union. He died in Berlin in 1902.[15]

C. The Works of the Union.

We shall now pass from the founders of the Union to the works of the Union itself. The idea behind the Union was twofold: first of all, there was a desire to attain a critical mass, to make the Union so large that it would rule the market in various products. The other idea was that the Union would have such a broad palette of products on offer that it would be immune from economic downturns: a fall in the demand for bridges might be offset by a rise in the demand for basic pig iron. In pursuit of this critical mass, the Union continued to expand at a feverish pace during the height of a boom. Neuschottland had leased blast-furnaces at Aplerbeck near Dortmund; this lease was renewed. The Union was very afraid that it might run out of sufficient iron ore. This fear was perhaps understandable in the days of the acid Bessemer process, when phosphor free iron ore (haematite) was at a premium. Per decision of the administrative board of 5 October 1872 the Union purchased an ironworks and iron ore mines at Bredelar in eastern Westphalia for 1.2 million thalers, and iron ore mines in Sweden: the Svabensverke.[16] In 1872 the Union also bought

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15. Walther Däbritz, Denkschrift zum Fünfzigjährigen Bestehen der Essener Credit-Anstalt in Essen (Essen, 1922) pp. 54, 56; P[aul] H[ermann] Mertes, Das Werden der Dortmunder Wirtschaft. Geschichte der Industrie- und Handelskammer zu Dortmund 1863-1914 (Dortmund, 1940) pp. 228-230; 100 Jahre Industrie- und Handelskammer zu Dortmund Die Geschichte einer Ruhrhandelskammer 1863-1963 [Dortmund, 1963] pp. 36, 49-50, 107, 109, 116, 143, 174.

16. Dortmunder Union Annual Report for 1872/73, pp. 11-22 in: Hoesch AG, Werksarchiv, Az. DHHU 1390.

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iron ore from French Algeria, buying 40,000 tonnes from the French enterprise Mokta-el-Hadid.[17] Alfred Krupp also feared that the Union might buy some iron ore mines in Spain.[18] To pay for the purchase of Bredelar (1.2 million thalers) and of Svabensverke (1 million thalers) the Union issued another 2.2 million thalers worth of shares, bringing its total share capital up to 13.2 million thalers, with the right to a dividend from 1 July 1872. (It is true that the original capitalization of the Dortmunder Hütte, Neuschottland, and the Henrichshütte totalled eleven, not ten million thalers, but I presume there was a six month delay in the final payment of one million thalers - probably to Strousberg.) The Union continued to invest still further: by 30 June 1873 its total capital invested was 18,188,625 thalers and 17 groschen. So it issued 6 million thalers worth of 6% bonds; it chose the comparatively high rate of 6% so as not to have to issue the bonds at a heavy discount.[19] This was a huge capitalization for an industrial company, although banks had higher capitalizations (the Disconto-Gesellschaft had a capital of 20.343 million thalers at this time) and railway companies had higher capitalizations still. Employment figures

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17. Bertrand Gille, "Minerais Algériens et Sidérurgie Métropolitaine. Espoirs et Réalités (1845-1880)" in: Revue d'Histoire de la Sidérurgie (Nancy, 1960) vol. 1, No. 4 p. 52.

18. Alfred Krupp, Hügel, 8 November 1872 to Lorsbach in: Alfred Krupps Briefe und Niederschriften vol. 11: Das Jahr 1872 fol. 272 in: H A Krupp.

19. Dortmunder Union Annual Report 1872/73, pp. 6, 11, in: Hoesch, Werksarchiv, Az. DHHU 1390.

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indicate that the Union was the largest industrial enterprise in the Ruhr in 1872-1873, and hence probably in Germany as well: as of 30 June 1873 the Union had 12,102 workers and 334 employees, whereas Krupp employed 11,671 men as of 24 February 1873.[20]

The works of this vast enterprise included:

i. Coal mines.
   a) The colliery "Glückauf-Tiefbau" near Barop.
   b) "Carl Friedrichs Erbstollen" near Weitmar which supplied part of the needs of the Henrichshütte at Hattingen, with which it was connected by a narrow-gauge railway.
   c) Sundry mines at Hattingen, namely:
      1) "Hermanns gesegnete Schiffahrt"
      2) "Valeria"
      3) "Zufälliggluck"
      4) "Bräutigam Erbstollen"

ii. Iron Ore Mines.
   a) Iron ore mines on the Ruhr, which mainly supplied the blast-furnaces of the Henrichshütte and those of Neuschottland at Hasslinghausen:
      1) Blackband concessions around Hasslinghausen.
      2) Blackband concessions around Sprockhövel.
      3) Siderite mines near Hattingen.
   b) Iron ore mines in the Siegerland.
      1) The siderite and limonite mine "Friedrich" near Wissen.
      2) Iron ore claims in the Olper area, which the Union planned to begin exploiting after completion of the railway line Finnentrop-Rothemühle.
   c) Iron ore mines in Nassau, mostly in the area of the Lahn river.
   d) Iron ore mines in the Rhineland: concessions near Neuwied, not currently exploited.
   e) Iron ore mines in the Harz, which supplied the blast furnaces at Othfresen, which were connected by a 9½ kilometre narrow-gauge railway with
      1) bean iron ore (Bohnerz, pisiform ore) deposits at Gross-Döhren.
      2) The Union also purchased iron ore rights around Clausthal and Zellerfeld.

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20. Däbritz, Disconto-Gesellschaft, p. 212; Dortmunder Union Annual Report 1872/73 p. 21 in: Hoesch, Werksarchiv, Az. DHHU 1390 (1873); F. M. Feldhaus, "Alfred Krupp" in: Allgemeine Deutsche Biographie (Leipzig, 1910) vol. 55, p. 533.

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f) Iron ore mines at Bredelar, which had been acquired in July 1872. These would not be accessible until the Ruhr Valley Railway (operated by the Rhenish Railway Company) reached there in the late autumn of 1872. Until then, the ores were smelted in the Theodor Hütte at Bredelar, which the Union had acquired along with the iron ore mines, paying 1.52 million thalers for the entire complex. The Union hoped it could supply eventually all its iron ore needs from the Bredelar.

g) The Svabensverke iron ore mines in Sweden, which also had a charcoal-fired blast-furnace works, plus 1018.32 areas (26,000 Morgen) of forest owned outright plus another 548.32 areas (14,000 Morgen) of forest with the right of unlimited use until 1900.

iii. Blast-furnace works: fifteen coke-fired blast-furnaces, plus three charcoal-fired blast-furnaces at seven different complexes:
   a) Dortmund, 3 coke-fired
   b) Othfresen, 4 coke-fired
   c) Henrichshütte, 4 coke-fired
   d) Horst, 2 coke-fired
   e) Hasslinghausen, 2 coke-fired
   f) Bredelar, 2 charcoal-fired (the Theodor Hütte)
   g) Svabensverke, 1 charcoal-fired

iv. Puddling and rolling mills
   a) Dortmund
   b) Horst
   c) Henrichshütte
   d) Aplerbeck (leased until 1885)

v. Bessemer steelworks
   a) Dortmund
   b) Henrichshütte

vi. Wheel factories, bridge-building works, mechanical workshops, foundries:
   a) Two wheel factories:
      1) For locomotive wheels
      2) For waggon wheels
   b) Bridge-building complex at Dortmund, still under construction during most of 1872-1873. In connection with this, the Union was also building a shop for the manufacture of points and other railway material.
   c) Three mechanical workshops, each with its own foundry, which made for third parties, as well as for the Union's own use smaller machinery and machine parts, forgings, rolls, and sundry castings, and were located at
      1) Dortmund
      2) Henrichshütte

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3) Horst

vii. Miscellaneous.
   a) The Union reckoned the value of its locomotive railways at 658,752 thalers, 11 groschen and 10 pfennigs; the Dortmund works were in the process of being linked to the Cologne-Minden and Berg-Mark Railways.
   b) Gasworks, gas and water pipelines, and telegraph lines reckoned to be worth 140,710 thalers, 8 groschen and 10 pfennigs.

The Bessemer steel production of the Henrichshütte was to be rolled at Horst; the Bessemer steel production at Dortmund, however, was located in the immediate vicinity of a hammer works and a rolling mill, and so could at once be made into rails.[21] On the other hand Dortmund was not the ideal location to make Bessemer steel, since all the ores it used had to be free of phosphorous, and these ores had to be imported. An ideal location would have been Duisburg on the Rhine; when Alfred Krupp considered expanding his Bessemer works by building a huge new complex, he at once thought of building it at Duisburg or in Spain.[22] The idea of building the Bessemer works at Dortmund originated with Strousberg, and bears the earmarks of his ill-considered enthusiasm. Strousberg was to later build a huge Bessemer works at Zbirow in Bohemia, even though Bohemia's iron ore is noted for its high phosphorous content and poor quality.[23] Although the development of the basic Bessemer process by

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21. Dortmunder Union Annual Report 1872/73, pp. 12-22 in: Hoesch, Werksarchiv, Az. DHHU 1390.

22. Carl Meyer, Berlin, 8 March 1876 to Sophus Goose in Essen, H. A. Krupp, W.A. IV 1439, fol. 133.

23. "Böhmische Briefe Nr. 242" in: Aktionär (Frankfurt/Main Sunday, 30 August 1874) vol. 21, No. 1079, p. 657.

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Sidney G. Thomas would make it possible for the Union to use German high-phosphorous ores by 1881, the Union's iron ore sources soon gave out and it continued to be dependent upon imports. Hence Dortmund was the worst possible location, in many respects, to establish a steel mill until Dortmund was linked with the ocean by the Dortmund-Ems canal in 1899.

The history of the Dortmunder Union, after this proud beginning, was a disaster unparalleled in German company history. The original par value of the shares of 600 marks apiece steadily melted away as the Union passed through four reorganizations: in 1875 the par value of the original shares (henceforth called class "B") had a third knocked off, and was reduced to 400 marks; in 1878 it was reduced to 300 marks; over the period 1878 to 1896, the class "B" shares were then converted into 100 marks worth of class "A" shares; then in 1896 these 100 marks worth of class "A" became 50 marks worth of class "C"; and finally, in 1902, the class "C" were reduced in the proportion 5:3 giving an ultimate par value of only 30 marks left from the original par value of 600 marks. The remaining 95% had been wiped away.[24]

Previous writers on the Dortmunder Union have competed to find the most belittling nickname for this disastrous venture: "machinery for the destruction of capital" (Die Kapitalzerkleinerungsmaschine), "the jar of the Danaids",

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24. Saling's Börsen-Papiere. Zweiter (finanzieller) Teil 34th edition. Saling's Börsen-Jahrbuch für 1910/1911. Ein Handbuch für Banquiers und Kapitalisten (Berlin, Leipzig, Hamburg, 1910) p. 870; Stillich, Eisen- und Stahl-Industrie, pp. 130-137.

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"financial quicksand". For thirty-eight years this company dragged out its existence: unable to live, yet the Disconto-Gesellschaft would not let it die. We shall now discuss the history of this company, which may also be expressed as the answer to the question: what went wrong?

D. Statistical Overview.

Prices of German iron and steel products, marks per tonne

	German Quality Puddling Iron	Ordinary Puddling Iron: Lux.,Lorraine, Loco ironworks[a]	Bessemer Pig iron	Bar and structural iron	Plate
Highest Price, 1873	180-192	120-126	210	360-390	480-510
1874[b]	81	54-57	102-108	186	252
1875	72	51-54	90-96	168	210-216
1876	58-60	44-46	80-82	140-145	185-190
1 Decbr 1876	58-60	40-42	75-78	135-138	180
1877	55-56	38-40	70-72	120-125	160-170
1878	54	36-38	65	112-115	150-160
1879	50	30-32	60	108-110	150-160
1880	55-58	38-39	72	120-125	180-190
1881	52-54	36-37	70-72	112-118	165-180
1882	62	45-46	63-67	130-134	195-200
1883	55-56	50-51	58-60	125-130	185-195
1884	49-51	42-43	52-53	115-120	165-175
1885	42-44	40-42	44-46	104-112	145-160
1886	40-42	38-39	42-44	92-100	130-145
1887	43-44	42	45	110	135-150
1888	47-50	45	50-54	125-127	145-165
1889	60-61	48	60	130-140	170-195
1890	65-68	58	75	165-175	180-210
1891	52-53	50	63	105-140	130-170
1892	50-51	50	59	88-120	120-150
1893	45-46	46	52	87-115	115-140
1894	45-46	45-46	52	83-100	112-135
1895	45-46	43-44	52	82-100	105-150[c]

NOTES: [a] From 1887 this is replaced by the rubric "Thomas iron", but it clearly refers to the same thing,namely iron containing phosphorous.
[b] All figures refer to 30 June of each year, unless otherwise specified.
[c] Ingot and Siemens Martin iron, 105-115 marks; wrought iron, 130-150 marks.

SOURCE: Annual reports of the Dortmunder Union, 1873/1874-1895/1896

Rail prices, 1873-1876, marks per tonne

	Ordinary Railway rails	Steel
Highest price, 1873	330	396

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30 June, 1874	186	255
30 June, 1875	162	204-210
1 December, 1876	132-138	138-150

SOURCE: Annual Reports of the Dortmunder Union, 1873/1874-1876/1877

Production and Sales Figures (Facturirung) of the Dortmunder Union:
I. Finished Iron and Steel Products

	Production (t)	Sales (t)	Average price,marks per tonne
1872/73	141,974.775	139,266.900	286.45
1873/74	125,618.752	128,722.321	294.81
1874/75	96,533.754	96,528.850	235.80
1875/76	86,547.232	87,449.157	214.44
1876/77	94,154.654	90,063.713	174.19
1877/78	124,295.934	121,031.050	167.71
1878/79	141,959.156	139,742.712	145.49
1879/80	145,642.829	152,334.891	134.92
1880/81	152,289.066	150,901.953	140.01
1881/82	185,335.720	186,417.487	140.07
1882/83	192,252.893	190,146.660	147.91
1883/84	162,077.135	162,025.888	138.93
1884/85	167,379.380	160,467.214	130.90
1885/86	157,529.011	165,025.280	121.20
1886/87	158,663.325	157,343.288	112.34
1887/88	194,143.668	194,722.944	120.40
1888/89	173,136.838	174,933.741	134.55
1889/90	195,272.361	194,402.712	155.25
1890/91	170,263.969	167,879.825	161.21
1891/92	187,200.867	187,461.290	134.49
1892/93	172,784.460	173,009.251	128.90
1893/94	180,866.051	173,857.015	114.76
1894/95	188,287.771	185,362.964	109.87
1895/96 -1899/1900: Not available			
1900/01	235,213	n/a	n/a
1901/92	258,001	n/a	n/a
1902/03	299,928	n/a	n/a
1903/04	284,457	n/a	n/a
1904/05	246,971	n/a	n/a
1905/06	300,576	n/a	n/a
1906/07	332,576	n/a	n/a
1907/08	303,718	n/a	n/a
1908/09	294,725	n/a	n/a

SOURCES: Dortmunder Union Annual Reports, 1872/73-1894/95;
Saling's Börsen-Papiere (Berlin, Leipzig, Hamburg, 1910)
34th edition, p. 872.

II. Special Rolled Products

	Production (t)	Sales (t)	Average Price, marks per tonne
1872/73	130,339.935	127,633.065	253.31
1873/74	113,470.758	115,764.729	274.67
1874/75	87,202.504	87,197.600	221.46
1875/76	74,764.632	75,666.557	190.36
1876/77	79,004.754	74,913.813	153.88
1877/78	107,244.384	103,979.500	139.06

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1878/79	127,607.076	125,390.632	126.40
1879/80	133,643.071	140,335.133	126.49
1880/81	140,515.505	139,128.392	131.84
1881/82	170,526.521	171,585.462	131.40
1882/83	175,426.223	173,354.008	137.53
1883/84	148,051.267	148,770.747	128.53
1884/85	153,111.523	146,399.745	121.06
1885/86	144,529.356	151,432.497	109.99
1886/87	145,461.259	144,376.730	102.41
1887/88	177,767.940	178,417.333	109.90
1888/89	154,635.160	156,503.589	120.27
1889/90	175,623.419	175,226.740	142.25
1890/91	149,307.855	147,175.226	139.57
1891/92	166,412.269	168,096.071	119.54
1892/93	152,449.224	151,822.022	109.22
1893/94	160,754.420	155,185.797	102.89
1894/95	166,898.594	164,277.955	98.64

SOURCE: Dortmunder Union Annual Reports, 1872/73-1894/95.

Sales and Profits of the Dortmunder Union, in marks

	Special rolled products	All finished iron and steel products	Profits (Losses)
1872/73	32,330,730	39,893,003	7,034,503.77*
1873/74	31,797,095	37,948,627	(4,465,422.52)
1874/75	19,310,780	22,761,502	113,304.91
1875/76	14,403,985	18,752,597	92,260.19
1876/77	11,527,737	15,688,198	(2,065,937.41)
1877/78	14,459,389	20,298,117	83,754.85
1878/79	15,849,375	20,331,166	134,168.96
1879/80	17,750,990	20,553,023	612,245.00
1880/81	18,342,686	21,127,782	899,211.73
1881/82	22,546,329	26,111,496	1,443,942.86
1882/83	23,841,375	28,124,592	1,966,714.29
1883/84	19,121,503	22,510,255	393,881.63
1884/85	17,723,152	21,005,157	492,566.33
1885/86	16,656,059	20,001,063	138,264.23
1886/87	14,795,620	17,575,944	138,419.98
1887/88	19,608,064	23,444,641	831,035.44
1888/89	18,822,685	23,527,334	1,247,858.22
1889/90	24,926,003	29,560,020	1,667,291.08
1890/91	20,541,245	27,063,905	817,995.94
1891/92	20,094,204	25,211,668	409,519.56
1892/93	16,582,110	22,300,892	409,519.56
1893/94	15,967,065	19,951,830	549,142.54
1894/95	16,204,376	20,365,828	84,934.14
1895/96	n/a	n/a	272,646.35
1896/97	n/a	n/a	1,800,258.01
1897/98	n/a	n/a	1,788,990.53
1898/99			2,262,976.43
1899/1900-1907/08 n/a			
1908/09			1,844,614

NOTES: * This figure is described in the balance sheet as the Restgewinn; There was also, before various deductions,

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a Reingewinn of 7,816,115.30 marks.
SOURCES: Dortmunder Union Annual Reports, 1872/73-1898/99;
Saling's Börsen-Papiere (Berlin, Leipzig, Hamburg, 1910)
p. B73. The sales figures in marks were calculated from
the two tables immediately preceding.

Workers and Wages at the Dortmunder Union

	Number of Workers as of 30 June	Average Number of Workers during the year[a]	Total Wage Bill	Annual Wages per capita[b]
1873	12,102[c]	n/a	18,339,008.31	n/a
1874	9,129[d]	n/a	12,583,033.70	n/a
1875	7,830[e]	n/a	9,014,254.21	1,151.25
1876	6,789	n/a	6,464,418.83	952.19
1877	6,322	n/a	5,862,545.83	927.39
1878	6,833	n/a	5,449,548.78	797.53
1879	6,439	n/a	5,443,023.64	846.37
1880	6,750	n/a	5,524,155.73	818.39
1881	6,615	n/a	5,849,811.40	884.33
1882	7,638	7,361	6,731,960.21	914.54
1883	7,677	7,801	7,571,914.02	970.63
1884	7,272	7,222	6,931,038.02	959.71
1885	7,129	7,112	6,866,721.03	965.51
1886	6,554	6,648	6,243,538.75	939.16
1887	6,903	6,402	6,032,243.25	942.24
1888	7,395	7,450	7,093,774.41	952.18
1889	7,517	7,486	7,372,850.96	984.88
1890	7,815	7,941	8,517,884.29	1,072.65
1891	7,386	7,629	7,993,260.05	1,047.75
1892	7,689	7,751	8,303,856.75	1,071.33
1893	7,579	7,585	7,735,307.01	1,019.82
1894	7,494	7,672	7,779,004.20	1,013.95
1895	7,285	7,297	7,259,363.71	994.84
1896	7,958	7,721	8,229,677.98	1,065.88
1897	8,439	8,306	9,413,650.25	1,133.36
1898	8,696	8,539	9,914,140.61	1,161.04
1899	10,238	9,993	11,730,211.36	1,173.84

NOTES: [a] "Year" refers to the Dortmunder Union's fiscal year of 1 July - 30 June, not to the calendar year; it is to be understood as the average number of workers employed during the twelve months preceding the 30 June of the year in question.
[b] This can only be calculated once the average number of workers in the preceding twelve months is known. These calculations were copied from the Dortmunder Union Annual Reports, and were not worked out by myself. They do not seem to have been distorted by including the wages of managerial staff.
[c] The Union also employed 169 managerial staff at its factories (Betriebsbeamte) and 165 managerial staff in offices (Bureaubeamte).
[d] Plus 278 managerial staff (Beamte).
[e] Plus 213 managerial staff (Beamte).
SOURCE: Dortmunder Union Annual Reports, 1872/73-1898/99.

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Dividends of the Dortmunder Union. (in %)

Class "B" ordinary

1872/73	12

Never received any more dividends after this.

Class "A" preference

1878/79	0
1879/80	2
1880/81	2 1/2
1881/82	4
1882/83	5
1883/84	1
1884/85	1 1/4
1885/86	1/3
1886/87	1/3
1887/88	2
1888/89	3
1889/90	4
1890/91	2
1891/92	1
1892/93	1

Class "C" preference

1896/97	5
1897/98	5
1898/99	6
1899/1900	7
1900/01	0
1901/02	0

	Class "C" ordinary reduced by 60%	Class "D" preference
1902/03	2	5
1903/04	2	5
1904/05	2	5
1905/06	2	5
1906/07	3	5
1907/08	2	5
1908/09	2	5

SOURCE: Saling's Börsen-Papiere (Berlin, Leipzig, Hamburg, 1910) 34th edition, p. 872.

Share price in Berlin on the last trading day of the year (in %)

	Class "B" ordinary 600 marks par value	Class "B" ord. 300 marks p.v.	Class "A" pref. 300 marks p.v.
1872	171	-	-
1873	83 5/8	-	-
1874	30	-	-
1875	10.9	-	-

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1876	5.1	-	-
1877	4	-	-
1878	6.1	13.2	46.5
1879	13.6	25.5	96.75
1880	12.1	26.25	88.75
1881	15	34.9	104.75
1882	13.4	28	89.4
1883	Not quoted	24.2	83
1884	8	17	61.5
1885	8.9	19	58.3
1886	Not quoted	22	68
1887	10	not quoted	65.75
1888	No more	not quoted	97.5
1889	quotations	not quoted	137.25
1890	-	not quoted	84.5
1891	-	not quoted	55.2
1892	-	not quoted	54.1
1893	-	14.5	56.3
1894	-	no more	58.5
1895	-	quotations	53
1896	-	-	49.9
1897	-	-	48.5

Class "C" preference issued 10 March 1896 at a price of 101.75%. The share price in Berlin was:

1896	102.25
1897	98.1
1898	98.5
1899	133.25
1900	82.2
1901	42.3 These shares were also traded in Hamburg and Essen.

The reduced (by 60%) Class "C" were issued in November 1902 at 66%, the new preference class "D" at 102%. The share prices in Berlin were:

	Class "C" reduced	Class "D" pref.
1902	71.8	102.75
1903	84.3	102
1904	87.25	102.4
1905	100.7	108.6
1906	83	104.75
1907	55.8	92
1908	61.4	93.1
1909	96	99.8

SOURCE: Saling's Börsen-Papiere (Berlin, Leipzig, Hamburg, 1910) p. 872.

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E. Financial History of the Dortmunder Union.

A glance at the quotations for the class "B" shares will show how rapidly the fortunes of the Union declined from the boom years of 1872 and 1873: the share price went from 171% at the end of 1872 to 4% at the end of 1877. The Union had many chronic problems, which were responsible for its lengthy misery; but the acute problems of the early 1870's, which caused such a reversal in the company's fortunes, are also worthy of examination. The chief reason was that the Union was caught with far too high stocks (inventories). Adolph von Hansemann, in an unusual flash of insight, also realized this. On 18 June 1874 he wrote to Freiherr Abraham von Oppenheim:

> "Reports about the general situation of the iron industry are so depressing that hopes for dividends in this sector are very weak (das Gefühl für Dividenden auf diesem Gebiete recht schwach ist). The prices for rails, bar iron etc. have fallen by 40 to 50% in a relatively short period. The hardest hit are works which entered this bad conjuncture with large stocks of raw materials and finished products. The Union is one of these."[25]

Statistics bear out Hansemann's analysis:

Value of Warehouse Stocks at the Dortmunder Union, 1872/73 - 1876/77

	Value (in marks)	Decline vs. previous year	Decline vs 1872/73
1872/73	15,953,031	-	-
1873/74	9,795,111	38.6%	38.6%
1874/75	8,136,550	16.9%	49%
1875/76	5,745,111	29.4%	64%
1876/77	5,643,700	1.8%	64.6%

SOURCE: Annual Reports of the Dortmunder Union, 1872/73-1876/77; the figures for the warehouse stocks of the Svabensverke are taken from marginal notes made by an indignant shareholder in the annual

25. Wilhelm Treue, Die Geschichte der Ilseder Hütte (Peine, 1960) p. 115.

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reports in possession of the Westfälisches Wirtschaftsarchiv, Dortmund.

The stock losses of 6.1 million marks would more than account for the Dortmunder Union's loss of nearly 4½ million marks in 1874/75; the high level of stocks also explains why the Dortmunder Union moved into loss so rapidly after it was founded, instead of descending more slowly into the abyss as the depression deepened in the 1870's.

But three years after the Union was founded, its horrendous losses brought it to the verge of collapse. An extraordinary general meeting met on 15 February 1875 to stave off the worst. It enacted the first reorganization of the Union: all the shares were reduced from a par value of 600 marks to 400 marks, the equity of the Union was accordingly reduced from 39.6 million marks to 26.4 million marks, giving a book profit of 13.2 million marks which was used against the loss of 1873/74, and for various write-offs. This part of the capital, the original equity of the Union, was henceforth known as the class "B" shares, which were now worth 66 2/3% of their original value. The Union obtained new capital through issuing 15 million marks worth of 6% cumulative preference shares, which were called class "A" shares.[26] (Cumulative preference shares must be paid all arrears on dividends due them before the ordinary shares can receive a dividend; if they receive only 5% one year, they must receive at least 7% the following year, before a dividend can be paid on the ordinary shares.) The plan to

26. Saling's Börsen-Papiere 34th Edition 1910/1911, p. 870; Stillich, Eisen- und Stahl-Industrie, pp. 130-131.

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issue these shares must have been arranged by the beginning of November 1874, when Carl Meyer, Krupp's representative in Berlin, reported to the Krupp Procurist Sophus Goose in Essen that the Finance Minister Carl Hermann Bitter said that the Union was all right so far as funds were concerned, since the banks had underwritten its securities. At the same time, however, Krupp was itself making a bond issue, and this absorbed the little demand there was in 1874 for heavy industrial securities. Hence, wrote Meyer, Rothschild's hostility to the Krupp loan: M. A. von Rothschild & Söhne had been one of the founders of the Union, and Rothschild was heavily engaged in Union preference shares.[27] As head of the Seehandldung, Bitter would be in a position to know of plans for new issues, since the Seehandlung underwrote all sorts of industrial securities in these years, including in 1873 the 6% Dortmunder Union bonds.[28]

The problem was a widespread one in Rhineland-Westphalia: the iron and steel firms needed new capital, yet there was no market for their securities. The bourse was totally demoralized. In March 1876 Louis Baare suggested to Wilhelm Heinrich Müller that Müller succeed Baare as General Director of the Bochumer Verein für Bergbau und Gusstahlfabrikation, and Müller wrote to his father the

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27. Carl Meyer, Berlin, 3 November 1874 to Sophus Goose in Essen, H. A. Krupp WA IV 1439 fol. 24.

28. Otto Glagau, Der Börsen- und Gründungs-Schwindel in Deutschland. (Zweiter Theil von "Der Börsen- und Gründungs-Schwindel in Berlin") (Leipzig, 1877) pp. 347-348.

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following opinion of the Bochumer Verein's financial situation:

> "The financial situation of the company is, although by no means disturbing, still not favourable. The intended financial operation - the issue of a million thalers of preference shares - has not succeeded and my opinion is that it cannot be realized under present circumstances. The company is thus financially dependent on its bankers - namely Schaaffhausen."[29]

Too many heavy industrial securities were chasing a market which did not exist. In the case of the Union, its underwriters had to buy all these preference shares at par, because the existing shareholders refused to exercize their rights. The issue was 2/3 underwritten by the Disconto-Gesellschaft, the remainder going to the other banks, namely Rothschild, Oppenheim, and Wilhelm von Born. The Disconto-Gesellschaft decided it would dig into its deep pockets and provide the Union with the resources it needed in the hope that the competition would collapse so the Union could control the market during the next upswing. Hansemann and Emil Russell said as much to Carl Meyer, who wrote to Sophus Goose on 13 March 1876, commenting on the low rail prices:

> "162 marks is now a very desirable price, since contracts are already being concluded at 156 marks! The competition is going still lower; it is claimed that the Union will eventually go as low as 150 marks! The Union does not amortize its capital, and does not need to do so. In fact, at the moment the Union is identical with the Disconto-Gesellschaft. The DG does not care at all if the Union operates at a loss - the Union just must and will continue to operate. Hansemann and Russell have assured me of this in all

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29. Scheibler and Wülfrath, Westdeutsche Ahnentafeln p. 227.

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seriousness!"[30]

Ending every sentence with an exclamation point was the Krupp house style.

The Disconto-Gesellschaft felt it had to defend its underwriting of 10 million marks worth of Union shares, and did so in its annual report for 1875:

> "The founding of the Union was a most correct and loyal operation. It occurred at a time when the iron prices were still normal, and there was no excess in the valuation of industrial securities. Not in the formation, but rather in the development of the Union lay the cause of the subsequent calamity. When the iron conjuncture suddenly became a strong boom and the continuing increase in their price made the Union's shares into a speculative favourite, the day-to-day management lost its objective judgement and its grip on the reins . . . It is a documented fact that the Disconto-Gesellschaft did not neglect its duty as a banker (Banquier) to counsel caution. Long before Herr Russell took over the reorganization the Disconto-Gesellschaft tried everything to stanch the financial overburdening of the Union. In connection with the successful reorganization a turn to the better has already now begun. Experience should teach that the Disconto-Gesellschaft's conduct in this was correctly suited for the Union's interest as well as for its own."

A few sentences before this the bank observed that earlier it had had a similar experience, and found that in a very short time it had been able to sell the preference shares at a profit.[31] This almost certainly referred to David Hansemann's reorganization of the Phoenix, Actien-Gesellschaft für Bergbau und Hüttenbetrieb in 1859-1860, when the banks converted their loans into preference shares,

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30. Carl Meyer, Berlin, 13 March 1876 to Sophus Goose in Essen, H. A. Krupp, W A IV 1439 fols. 150-151.

31. Disconto-Gesellschaft Annual Report 1875 pp. 5-6, in: Deutsche Bank, Historisches Archiv.

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and were soon able to sell these shares at a profit. Yet when David Hansemann carried out this reorganization, he had also reduced the value of the ordinary shares not by a third, but by 90% in one blow. Not until the gold mark balance sheets of 1924 would another German company reduce its capital by so much at once. Because the reorganization was so severe, it was very successful.[32] This is what distinguishes the reorganization of the Phoenix and the reorganization of the Dortmunder Union, the reorganization of Hansemann father and the reorganization of Hansemann son. To be fair to Adolph von Hansemann, his father enjoyed certain advantages when reorganizing the Phoenix which his son did not: the Phoenix had been founded in 1852, and the Disconto-Gesellschaft only became involved with it from 1857. David Hansemann thus was an outsider, could break with the past and carry out a severe reorganization without hurting his bank's reputation. The Dortmunder Union, on the other hand, was founded a mere three years before the first reorganization, and the Disconto-Gesellschaft was extremely closely associated with it. A severe reorganization, possibly including a break-up of the Union into its various components, would have been a severe loss of face. This then brings us back to the different characters of the son and the father: the father who cared little for appearances, and who ruthlessly reached for the heart of the matter; and the son, for whom appearances were everything.

No sooner than three years after the first

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32. Stillich, Eisen- und Stahl-Industrie pp. 146-150.

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reorganization of the Union, a new reorganization was needed. The class "A" preference shares received no dividends at all, let alone 6%; the Union, which, like most German ironworks, sold its rails with a replacement guarantee for several years, had to replace numerous rails; and the Union was afflicted by a number of bad debts, most notably due to the collapse of the railway contractor Ferdinand Plessner, who cost the Union 700,000 marks. In 1876/77, the Union lost 2 million marks. So on 14 March 1878 another extraordinary general meeting gathered and decided on a further capital reduction. The par value of all the shares - class "A" as well as class "B" - was reduced from 400 marks to 300 marks. An investor in class "B" now had only 50% of his original investment left, an investor in class "A" only 75%. The company's equity was now 11.25 million marks worth of class "A", and 19.8 million marks worth of class "B". The Union was then empowered to issue another 30 million marks worth of class "A" shares: in the event, the Disconto-Gesellshaft bought up 2,000,400 marks class "A" in 1877/78, 3,695,400 marks in 1878/79, 8,393,700 marks in 1879/80, 4,058,700 marks in 1880/81 and 3 million marks in 1882/83 - a total 21,148,200 marks worth of class "A", which including the previous figure gives us 32,398,200 marks class "A". Finally, the class "B" shareholders were allowed to convert their shares into class "A", under a formula whereby three class "B" were worth one class "A". Most of the class "B" shareholders took advantage of this offer, since it was the only prospect they had of obtaining

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a dividend: the amount of class "B" outstanding fell from 19.8 million in June 1878 to 5,837,400 in June 1879. Since there was now de jure (if not de facto) only one class of Dortmunder Union shares, the class "A" shares lost their status as preference shares and also lost their claim for any dividend arrears. An investor in class "B" now had only one-sixth of his original capital left, or less than 17%.[33]

In the decade of the 1880's the situation of the Union appeared to stabilize: the decade passed without another capital reduction, and the class "A" shareholders even received a dividend every year - albeit often only 1/3%. In the 1890's, however, the situation of the Union again deteriorated. The Union's debts rose from 20.3 million marks in 1892 to 29.3 million marks in 1895. Of this last figure, 8 million marks worth was bank debt - owed to the Disconto-Gesellschaft. Another reorganization was necessary. After a fiasco at the extraordinary general meeting of 25 January 1896, where the shareholders refused to vote through the 5:2 capital reduction proposed by the board, a second extraordinary general meeting was summoned for 26 November 1896. At this meeting, the shareholders pushed through a milder capital reduction: 50%, giving a capital of 19½ million marks class "A". These reduced shares were then put on an equal basis with the 13½ million class "C". An original investor in the 600 marks class "B" shares would have had only one-twelfth, or 8 1/3% of his

33. Saling's Börsen-Papiere 34th edition 1910/1911 p. 870; Stillich, Eisen- und Stahl-Industrie, p. 132.

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original investment left.[34]

Over the next few years the Union's situation seemed to improve. The class "C" shares received a dividend of 5% for 1896/97 and 1897/98, and as the boom of the nineties reached its peak, the dividend increased: the class "C" shares received 6% for 1898/99, and 7% for 1899/1900. The Union could even undertake a capital increase: the general meeting of the shareholders on 16 September 1899 authorized the Union to issue an additional 9 million marks worth of class "C". These shares were issued to pay for the acquisition of all the Kuxen of the Gewerkschaft Mengeder Steinkohlengruben, which owned the colliery "Adolf von Hansemann". Then the iron industry was struck by the severe crisis of 1900/1901, and the Union, as always, suffered disproportionately. The Union was also hurt by its usual bad luck: on 8 January 1901 there was a fire-damp explosion at the colliery, "Adolf von Hansemann", in which fortunately only two miners were killed, but the explosion did cause $2^1/_2$ million marks worth of damage. The time had arrived for the Union's fourth and final reorganization. An extraordinary general meeting on 9 June 1902 reduced the share capital of the class "C" shares from 42 million marks to 25.2 million marks, or in the ratio 5:3. The shareholders had to hand in their shares, and of every five shares two were destroyed and the remaining three returned as stamped class "C". An original investor in the 600 marks

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34. Saling's Börsen-Papiere 34th edition 1910/1911 p. 870; Stillich, Eisen- und Stahl Industrie, pp. 133-134.

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class "B" would have only one-twentieth, or 5% of his original investment left. Six hundred marks invested in the original shares of the Dortmunder Union would be worth only thirty marks by the end of 1902. The bourse had not been too gloomy when it priced Dortmunder Union class "B" shares at 4% at the end of 1877; if anything, since this price did not take account of lost interest, it was too optimistic.

As usual, the Union obtained new funds through issuing a new class of preference shares: 10.8 million marks worth of class "D", entitled to a dividend of 5%. Only after the class "D" had been paid 5% could the reduced class "C" receive 4%; any surplus remaining after that was to be distributed evenly among the shares according to the amount of their par value. The old class "C" shareholders could subscribe for these new class "D" at par, under the terms that four old class "C" entitled the shareholder to buy at par one new class "D"; this offer remained open until 4 July 1902. The Disconto-Gesellschaft then underwrote any class "D" which were not taken up by purchasing them at par.[35]

Something rather remarkable occurred, however, when the Disconto-Gesellschaft applied for the listing of these new class "D" shares on the Berlin stock exchange. Normally this was a rubber-stamp procedure. But this time even the patience of the committee which admitted shares to quotation (the Zulassungsstelle) was exhausted. It refused to allow

35. "Eine Wetterexplosion im Förderschachte der Zeche 'Adolf von Hansemann'" in: Berg- und Hüttenmännische Zeitung (Leipzig, 15 February 1901) vol. 60, No. 7, p. 85; Saling's Börsen-Papiere 34th edition 1910/1911 p. 870; Stillich, Eisen- und Stahl-Industrie, p. 135.

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the new shares to begin trading until it had seen the Union's annual report for the following year. The Disconto-Gesellschaft thereupon complained to the Ältestenkollegium of the Berlin Kaufmannschaft (the committee of aldermen of the Berlin merchant community: the peculiar antique association which served Berlin in lieu of a modern chamber of commerce), which had responsibility for the Berlin stock exchange, and the Ältestenkollegium overruled the Zulassungsstelle. It was, however, a remarkable demonstration of how low the reputation of the Dortmunder Union had fallen.[36]

There is a depressing rhythm to the financial history of the Dortmunder Union: every decade, the company required a reorganization. We do not know how the rest of the Union developed after 1906, but if the situation at Horst is any guide - and the Horst works, formerly Neuschottland, was usually one of the more profitable divisions of the Union - another reorganization lay around the corner. Horst had only one blast-furnace in operation, and had to sell its special iron at below the cost of production. In 1909/10 Horst lost 80,466.74 marks, only the third loss in its history: the other two losses occurred in the catastrophic years 1876/77 and 1901/02. The Union, in the opinion of Karl Mews (the historian of the Horst works) was only saved by a white knight - the merger on 8 September 1910 into the Deutsch-Luxemburgische Bergwerks- und Hütten-AG of Hugo

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36. Lindenberg, Spekulationsbank, p. 22 note; Stillich, Eisen- und Stahl-Industrie, p. 135.

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Stinnes. The merger into Deutsch-Lux nearly cut the share capital in half again, because 42 million marks worth of Union shares were exchanged for 22.2 million marks worth of Deutsch-Lux shares. This merger meant that Deutsch-Lux increased its share capital to 100 million marks. The Union's shares were exchanged according to the formula that 6000 marks worth of class "C" was swapped for 3000 marks worth of Deutsch-Lux, and 10,500 marks worth of class "D" was swapped for 6000 marks worth of Deutsch-Lux.[37] An original investor in the 600 marks class "B" shares of the Dortmunder Union would end up with 15 marks worth of Deutsch-Lux shares, or 2½% of his original investment. From first to last, the Dortmunder Union was a disaster.

A number of pre-war writers on economic questions - namely Otto Lindenberg, Oskar Stillich, Robert Liefmann and V.I. Lenin - assert that the Disconto-Gesellschaft reaped a profit from these reorganizations, by charging the Union interest and other fees and palming Union shares off on the public. This is incorrect, and I shall show with the example of the class "A" shares that the Union actually cost the Disconto-Gesellschaft a considerable amount of money. Lenin, in his Imperialism, quotes Hilferding:

> "All reorganizations and reconstructions have a twofold significance for the banks: firstly, as profitable transactions; and secondly, as opportunities for securing control of companies in difficulties."

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37. Mews, "Neuschottland 1856-1956" pp. 47, 57; Gerhard Gebhardt, Ruhrbergbau. Geschichte, Aufbau und Verflechtung seiner Gesellschaften und Organisationen (Essen, 1957) p. 231.

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Lenin's summary of the history of the Union is worth quoting in full:

> "The Union Mining Company of Dortmund was founded in 1872. Share capital was issued to the amount of nearly 40 million marks and the market price of the shares rose to 170 after it had paid a 12 per cent dividend for its first year. Finance capital skimmed the cream and earned a trifle of something like 28 million marks. The principal sponsor of this company was that very big German Disconto-Gesellschaft which so successfully attained a capital of 300 million marks. Later, the dividends of the Union declined to nil; the shareholders had to consent to a 'writing down' of capital, that is, to losing some of it in order not to lose it all. By a series of 'reconstructions' more than 73 million marks were written off the books of the Union in the course of thirty years. 'At the present time, the original shareholders of the company possess only 5 per cent of the nominal value of their shares' but the banks 'earned something' out of every 'reconstruction'." [38]

In addition to incorrectly assuming that the banks made money from reorganizing the Union, the 28 million marks worth of cream which finance capital skimmed off is Lenin's own invention: he is assuming that the banks were able to realize all their holdings at the high price of 170%, which is extremely improbable. The idea that the Disconto-Gesellschaft profited from reorganizing the Dortmunder Union Lenin has taken over from Oskar Stillich, who has written:

> "This is the key why a bank like the Disconto-Gesellschaft has not been bled to death by the Dortmunder Union. The Disconto-Gesellschaft all the time made huge cash advances to the Union, but

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38. Rudolf Hilferding, Finance Capital. A Study of the Latest Phase of Capitalist Development ed. Thomas Bottomore, trans. by Morris Watnick and Samuel Gordon (London, 1981) p. 126; V.I. Lenin, Imperialism, the Highest Stage of Capitalism (Moscow, [17]1978) p. 54; V. I. Lenin, Collected Works vol. 39: Notebooks on Imperialism (Moscow, 1968) pp. 52-53, 375; Lindenberg, Spekulationsbank, pp. 22-23; Stillich, Eisen- und Stahl-Industrie, pp. 133-134.

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> received for them securities in exchange and sold these on to the public. As a result the Disconto-Gesellschaft should not have suffered any losses because of the Union, to say nothing of the profits which are linked to these credit transactions."[39]

I shall demonstrate that the reorganizations of the Dortmunder Union cost the Disconto-Gesellschaft a good amount through the example of the class "A" preference shares, because the Disconto-Gesellschaft made the most revealing admissions about these in its annual reports. The Disconto-Gesellschaft said in its annual report for 1875 that it had underwritten two-thirds of the issue of five million thalers worth of Union preference class "A" shares. According to Saling's Börsen-Papiere, all issues from 1878 onwards were underwritten by the Disconto-Gesellschaft alone; Rothschild and Oppenheim had evidently had their fill of Union preference shares. All these shares were underwritten at par. Yet the price of the class "A" rose above par in only two years: 1881 and the extraordinary boom year of 1889. Clearly, the Disconto-Gesellschaft must have lost substantial sums because it kept on having to swallow Union paper, yet we find only one admission of this. In its annual report for 1879, the Disconto-Gesellschaft said it had reduced its account of securities with special reserves from nearly 28 million marks to around 14½ million marks. Most of the reduction was accounted for by the sale of 8,211,300 marks worth of Dortmunder Union preference shares. These yielded 5,013,893 marks, or an

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39. Stillich, Eisen- und Stahl-Industrie, pp. 133-134.

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average price of 61%, which mean the Disconto-Gesellschaft lost 3,197,407 marks. The Disconto-Gesellschaft seemed to regard 61% as a good price - and since the class "A" had been quoted at 46½% at the end of 1878, one can only agree. The Disconto-Gesellschaft also said that it had been able to sell the latest issue of Dortmunder Union preference shares at a profit in the new year, namely 1880.[40] It is difficult to synchronize events between the Dortmunder Union and the Disconto-Gesellschaft because of the six month lag between the two companies' fiscal years. I shall assume, however, that the entire issue of the class "A" for 1879/80 - 8,393,700 marks - was sold above par. I shall also assume, since the closing price for 1881 was above par, that the issue for 1880/81 - 4,058,700 marks - was also sold above par. The Disconto-Gesellschaft almost certainly lost money on all the other issues; the only possible exception could be the issue of 3 million marks in 1882/83, if the Disconto-Gesellschaft held onto these shares until 1889, which is unlikely: the bank would almost certainly have preferred liquidating its holdings at a loss of 15% to carrying a long-term and risky investment on its books. I shall now estimate how much money the Disconto-Gesellschaft lost on these various issues. The Disconto-Gesellschaft took up 10 million marks worth of the initial class "A" of 1875. These were then reduced to 7½ million marks by the reorganization of 1878. Adding the issues of 1877/78 and

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40. Paul Steller, Handbuch für Capitalisten. Ein Sammel- und Nachschlagewerk für Privatleute und Bankiers (Grünberg/Silesia, 1891) part two, pp. 124-125, 724.

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1878/79 gives us a total value of 13,195,800 marks at par. 8,211,300 marks of this was sold at 61% in 1879. Assuming the remaining 4,984,500 marks was sold previously at 60% (and the Disconto-Gesellschaft did consider 61% a very good price) the Disconto-Gesellschaft would have lost 40% on these class "A", or 1,993,800 marks. For the later issue of 1882/83, I will assume a price mid-way between the closing prices of those two years - 85%, which would mean that the Disconto-Gesellschaft would have lost 450,000 marks on that issue. The losses add up as follows:

25% loss due to 1878 capital reduction	2,500,000
40% loss due to sales of class "A" before 1879	1,993,800
39% loss due to sale of class "A" in 1879	3,197,407
15% loss of the class "A" issue of 1882/83	450,000
Total losses	8,141,207

I have purposely made these estimates on the low side. The point I wish to bring out is that the Disconto-Gesellschaft lost a substantial amount because of its involvement with the Dortmunder Union. Eight million marks is a minimum for the class "A" alone. The figure was almost certainly much higher, but German banks in this period almost never broke out their holdings of securities for their own account, and Disconto-Gesellschaft annual reports do not readily confess to losses. I have only been able to estimate the eight million figure because of the revealing admission in the 1879 annual report. The assertion by Lindenberg, Stillich, Liefmann and Lenin, and the general observation by

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Hilferding, that the Disconto-Gesellschaft did not lose any money when reorganizing the Union is therefore false.

Why then did the Disconto-Gesellschaft, in Stillich's vivid phrase, not bleed to death? One of the most important reasons why the Disconto-Gesellschaft did not bleed to death is because the most difficult reorganizations of the Union - those of 1875 and 1878 - happened at a time when the bank had extremely ample reserve funds. During the boom years of the Gründerjahre the Disconto-Gesellschaft had salted away its extraordinary profits in its reserve funds. Now it drew down these reserves to pay for the reorganizations of the Union. The later reorganizations of the Union - those of 1896 and 1902 - took place in a more buoyant economic climate than the dark days of the 1870's, and put the bank less at risk. Secondly, the share capital of the Dortmunder Union was always smaller than that of the Disconto-Gesellschaft, and shrank relatively as the years went on. By 1872 the Disconto-Gesellschaft already had a share capital of 60 million marks. The Union, by contrast, never exceeded the limit of 42 million marks. Thirdly, the secondary market in Union shares always remained buoyant enough so that the Disconto-Gesellschaft could relieve itself of some of this paper. It was not able to sell Union paper at a profit, as Stillich alleges - it usually sold at a hefty discount - but at least the Disconto-Gesellschaft did not have to bear all 73,050,000 marks of losses alone.[41]

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41. Lindenberg, Spekulationsbank, pp. 46-47; Stillich, Eisen- und Stahl-Industrie, p. 136.

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At worst, the Disconto-Gesellschaft lost half that figure. Fourthly, because these losses took place over a period of thirty years, the Disconto-Gesellschaft could steadily write them off against its less spectacular but more reliable and profitable lines of business: discounting bills of exchange, running current accounts, underwriting government securities.

Perhaps the greatest loss to the Disconto-Gesellschaft - and the least easy to quantify - was the opportunity cost of the ventures it could not participate in because its funds were tied up in the Union, and the related loss of the huge amount of valuable management time spent upon the Dortmunder Union. Paul Steller, a financial journalist and a lobbyist for the Rhenish engineering industry, once saw Adolph von Hansemann presiding over a general meeting of the shareholders in Dortmund, where he kept himself wrapped in deepest silence - evidently he was bitter that in spite of his other successes, he still did not have any luck with the Dortmunder Union. On another occasion Hansemann showed a greater sense of humour. A professional corporate gad-fly, the Berlin private banker Jarislowsky, asked Hansemann in a general meeting of the Disconto-Gesellschaft how things were with the Dortmunder Union. Hansemann cupped his hands around his mouth, and shouted "Faul!" It is interesting to note that Steller, Jarislowsky and also Jacob Riesser were aware that the Dortmunder Union lost money for the Disconto-Gesellschaft. Perhaps this is because they had the advantage over Lindenberg, Stillich, Liefmann, Hilferding

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and Lenin of a practical knowledge of business affairs.[42]

Before I proceed to discuss the industrial causes of the problems of the Dortmunder Union, I would like to rehearse again the financial causes. An early financial problem was inadequate stock controls, resulting in severe stock losses and the first crisis of the Union after iron prices collapsed in 1873. Secondly, although the Disconto-Gesellschaft reorganized the Union on no fewer than four separate occasions, the reorganizations were never severe enough: Adolph von Hansemann never slashed the Gordian knot the way his father had at the Phoenix in 1859-60. Curiously, the Union does not seem to have been too highly geared: the balance sheet of 30 June 1909 shows some 29 million marks in various debts (23½ million in bonds and other secured debts, the rest owing to bankers and suppliers) versus 42 million marks in equity.[43] This was not highly geared for the industry - Stinnes, Thyssen and Krupp were more highly geared than this - but the Union was too weak to support such a burden. The Union could not even support the burden of a huge share capital: whenever the Union approached or exceeded the figure of 40 million marks, it collapsed. The Union's problem was not that its debts

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42. Hans Fürstenberg, Carl Fürstenberg. Die Lebensgeschichte eines deutschen Bankiers 1870-1914 (Berlin, 1931) p. 212; Paul Steiler, Führende Männer des rheinisch-westfälischen Wirtschaftslebens. Persönliche Erinnerungen (Berlin, 1930) pp. 25-27; Jacob Riesser, Die Deutschen Grossbanken und ihre Konzentration im Zusammenhang mit der Entwicklung der Gesamtwirtschaft in Deutschland (Jena, ⁴1912) pp. 392-393.

43. Saling's Börsen-Papiere, 34th edition 1910/1911, pp. 870-873.

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were too high, but rather that it had too much equity capital in issue, and never reduced this severely enough. The third cause of the Union's troubles is the most interesting: this is the strategy of the Disconto-Gesellschaft during the 1870's. This is revealed by Carl Meyer's letter of 13 March 1876, which I have quoted above, (pp.255-256). The Disconto-Gesellschaft was not bothered by the Union's losses, so long as it continued to produce flat out: the Disconto-Gesellschaft hoped that this would drive less financially secure competitors out of business, ultimately strengthening the position of the Dortmunder Union. The Disconto-Gesellschaft believed it had the advantage of deep pockets, and wanted to exploit this. Thus the Disconto-Gesellschaft and the Dortmunder Union made insufficient efforts to come to grips with the Union's problems. Although this actual policy almost certainly did not continue beyond the 1870's, this heritage of profligacy seems to have persisted, and the severe reorganization which the Union really needed never materialized.

F. Personnel Questions.

During the boom years of 1872 and 1873, the Dortmunder Union hired anyone it could find, and the total number of workers shot up to a peak of 12,102. The sudden reversal in the Union's fortunes led to mass dismissals. On 26 July 1874 Wilhelm Heinrich Müller wrote to his father to say ("This is confidential") that the Union had already fired 4000 workers and nearly 100 management personnel. The dismissals continued until the number employed reached a low

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of 6,322 in 1877 - a decline of 48%. The number of employees thereafter fluctuated around the figure of 7000. The Dortmunder Union did not experience, unlike the Gelsenkirchener Bergwerks-Actien-Gesellschaft, a steady growth in the number of its employees. A worker at Gelsenkirchen could feel a part of an expanding, growing team, and never need fear for his job; the demoralization at the Union, on the other hand, must have been very bad indeed.[44]

The development of the Union aggravated this demoralization. The ideal of Ruhr management was to build up an Arbeiterstamm (literally, "core work-force", but with stronger emotional implications) or a Hüttenfamilie (an "ironworks family") which would be won over to the individual company through generous provision of social amenities: worker's housing, old age insurance, crèches, kindergartens, communal laundries, medical provisions. But one could not build up a true Arbeiterstamm if the number of employees had to be reduced with every economic downturn. In addition, the Union developed and expanded the Dortmund works at the cost of Horst, Hasslinghausen, and the Henrichshutte: the works which had the longest traditions and the highest morale. The annual report of the Union even praised the workers at Horst in the understated manner of such documents, saying in 1905/06 that the industrial

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44. Scheibler and Wülfrath, Westdeutsche Ahnentafeln, p. 223; Stillich, Eisen- und Stahl-Industrie, pp. 99-100; Die Steinkohlenbergwerke der Vereinigte Stahlwerke A-G. Die Schachtanlage Alma in Gelsenkirchen (Essen, 1930) pp. 12-13.

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relations at Horst were "not unfavourable". But it lay in the nature of the Union's development that Horst was more severely run down than Dortmund: the number employed at Horst fell from 1957 in 1873 to 389 by 1909/10.[45]

Although the General Director of the Dortmunder Union, Wilhelm Heinrich Müller, would have preferred to give more independence to the managers of the various divisions (according to Müller's family history; Strousberg, on the other hand, blames Müller for the centralization), in 1872 the Dortmunder Union was given a highly centralized management structure. The directorate (Direction) of the Union consisted of three full directors (Wilhelm Heinrich Müller, Friedrich Netcke, and Wilhelm Rosendahl), plus two deputy directors. Below the directorate were managers for the local works, such as Horst and Henrichshütte; above the directorate was an administrative board, with broad powers to intervene in the day-to-day running of the company. The administrative board was itself split into a Westphalian committee and a Berlin committee; the former was under the chairmanship of Friedrich Grillo, and took care of technical matters (Grillo had special responsibility for the collieries), the latter was under the chairmanship of Adolph von Hansemann, and took care of financial questions. General questions were decided by a plenary sitting of the administrative board. This management structure combined the weaknesses of over-centralization plus the seeds of discord. There were conflicts between the Westphalian

45. Mews, "Neuschottland 1856-1956" p. 47.

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committee and the Berlin committee (the Gelsenkirchener Bergwerks-Actien-Gesellschaft would suffer similar conflicts); there were serious tensions between the local managers and the central directorate in Dortmund. The local managers particularly disliked the way the office in Dortmund would draw up central balance sheets which would plunge individual works into loss, without the managers being able to appeal against them. Transfer pricing is a delicate question in a vertically integrated enterprise, and the Union was not very successful at dealing with this problem. As part of the reorganization of 1875, the management was decentralized.[46]

When a company gets into trouble, the easiest factor to change is the management. Because of this and because of the natural tendency to personalize problems, commentators both now and in the past are quick to blame management for a company's troubles. Yet companies often run into trouble (or enjoy success) because of factors beyond managers' control: trends in world markets, mining accidents, a merged company where the pieces do not fit. Contemporaries of the Dortmunder Union also blamed management for the company's problems. The first General Director, Wilhelm Heinrich Müller, was a favourite target. Strousberg is the most vocal critic:

> "It cannot be denied that [Müller] is a gifted man, he has perspicacity, energy, and a good knowledge of business, but he is ambitious to

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46. Dortmunder Union Annual Reports, 1873/74 and 1874/75; Stillich, Eisen- und Stahl-Industrie, pp. 93-94; Scheibler and Wülfrath, Westdeutsche Ahnentafeln pp. 221-222.

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> excess, domineering, petty, pig-headed and quarrelsome, a good horse in strong hands, who bolts and kicks over the traces when he does not feel a master's hand; he suddenly considered himself a big bug (grossartiges Thier) and got loose."

Strousberg attacks Müller for four specific mistakes. Müller bought a large quantity of pig-iron for puddling, which turned out to be too grey, and instead of selling the pig-iron at a profit had the iron processed anyway, which led to the Union losing a thousand thalers a day. This led the director of the rolling works to resign. In addition, Müller did not get enough raw materials to keep the Bessemer works at the Henrichshütte supplied. Furthermore, he bought iron ore from Algeria (as we know, from Mokta-el-Hadid) at prices which were too high. In the mid-1870's this ore was finally sold on to the Hoerder Verein - naturally at far below the price the Union paid. Finally Strousberg claims that at the height of the boom the Union had an arrogant disregard for potential orders: when Netcke's brother, a railway manager, made the Union a very attractive offer for 30,000 tonnes of Bessemer steel rails for the Austrian Staatsbahn, the Union did not accept it:

> "For these gentlemen heaven was fully laden with violins; and how could it be otherwise, when they were all participating in share speculations and considered an agio of 80% as cheap."[47]

There is doubtless a kernel of truth in some of these allegations - but not much more, since they are based on rumours and gossip, which Strousberg obtained from disgruntled and dismissed employees. Strousberg himself is

47. Strousberg, Strousberg und sein Wirken, pp. 439-440.

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by no means unbiased; he wants to put as much blame on Müller as possible to divert attention from the poor state and over-capitalization of the Dortmunder Hütte. It is credible enough, however, that Müller got carried away during the boom of 1872/73 and made rash purchases, acted high-handed with clients. Yet this does not cancel out Müller's undoubted talents.

Müller began his career in Ruhr heavy industry in 1862 when he joined Neutschottland, after a successful business career in the United States; he was extremely young, being born in 1837. It was soon clear that the General Director of Neuschottland, Nicolaus Druckenmüller, a former schoolmaster and close friend of August von der Heydt, was not up to his position, and in 1864 Müller replaced him as General Director. Müller, and to a lesser extent the technical director Friedrich Netcke, were the architects of the recovery of Neuschottland: the share price rose from 65% in 1865 to 109% in 1871 and 117½% in 1872. The company recommenced paying dividends: 4% in 1868, 6% in 1869, 8% in 1870 and 8% in 1871. This spectacular turn-around made Müller's reputation, and one of the reasons Friedrich Grillo decided to bring Neuschottland into the Dortmunder Union was to secure the talents of Müller and Netcke. Grillo's high opinion of Müller was shared by other Ruhr industrialists: in 1870 Leopold Hoesch proposed to Müller that Müller go into partnership with Hoesch's sons in establishing a rolling and Bessemer works in Düsseldorf; and in March 1876 Louis Baare of the Bochumer Verein für Bergbau und

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Gusstahlfabrikation proposed that Müller become his successor. Müller gave fresh evidence of his managerial talents after he left the Union, when he built up the iron trading firm of W. H. Müller & Co. of Düsseldorf, which became a leading Continental iron merchant. Müller's business successes elsewhere and the high regard in which he was held by his fellow Ruhr industrialists suggest that it was not Müller's failings which hurt the Union; rather, the Union's problems were so intractable that they were beyond even a manager of Müller's stature.[48]

Working extremely closely with Wilhelm Heinrich Müller during the years 1872-1876 was Emil Russell, on secondment from the Disconto-Gesellschaft. Although Adolph von Hansemann later sought to blame Müller for all that had gone wrong at the Dortmunder Union (Strousberg is probably echoing the Hansemann line), the Disconto-Gesellschaft had been fully informed of everything since Russell had been working at Müller's side from 1872. Emil Russell was born in 1835, trained as a lawyer, and produced such a good result on his juridical examination that he was at once promoted to mayor of Papenburg on the Ems, a post he held from 1861 until 1870. It was while Mayor of Papenburg that he met Johannes Franz Miquel (mayor of Osnabrück 1865-1869) at the Hanoverian conference of municipalities (Städtetag). Impressed by Russell's talents, Miquel persuaded him to come over to the Disconto-Gesellschaft as the bank's house lawyer

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48. Scheibler and Wülfrath, Westdeutsche Ahnentafeln, pp. 207-241; Mews, "Neutschottland 1856-1956" pp. 22-30.

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(Syndikus). In 1876 Russell became a full partner, filling the post left vacant by Miquel's resignation in 1873. In addition to his important role at the Dortmunder Union, Russell was - as we shall see in chapter five - a very close advisor of Emil Kirdorf at the Gelsenkirchener Bergwerks-Actien-Gesellschaft. Russell became second vice-chairman in 1879 of the chief lobby group of heavy industry, the Centralverband deutscher Industrieller (the Central Association of German Industrialists). Miquel also persuaded Russell to advise on two legal matters: Russell was consulted on the stock exchange tax law in 1884, and he sat on the commission for the codification of German Civil Law. The remark that Emil Russell was a "hard man" (harte Herrn) seems to be a figment of Helmut Böhme's imagination: all evidence suggests he was extremely likeable, and he became good friends with Wilhelm Heinrich Müller, Carl Meyer of Krupp, and Emil Kirdorf.[49]

During 1873 Russell was in Dortmund often for weeks at a time. Since he disliked staying in hotels, he stopped with Müller. But this temporary arrangement became more permanent as the situation of the Union worsened and Hansemann sought to shift the blame to Müller. On 3 November 1874 Carl Meyer reported the following conversation

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49. Ernst Wilhelm Schmidt, Männer der Deutschen Bank und der Disconto-Gesellschaft (Düsseldorf, 1957) p. 42; Henry Axel Bueck, Der Centralverband Deutscher Industrieller 1876-1901 (Berlin, 1901) vol. 1, pp. 186-187; Scheibler and Wülfrath, Westdeutsche Ahnentafeln p. 220; Helmut Böhme, "Emil Kirdorf, Überlegungen zu einer Unternehmerbiographie" in: Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie (Munich, 1968) vol. 13, p. 285.

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with the Prussian Minister Bitter to Sophus Goose:

> "The talk came to the Union; he [Bitter] gave me the following piece of information, which I found very striking! Director Müller is not up to his position; Hansemann has sent Russell to Dortmund, to bring order into the management! Provisionally for six months, but probably permanently! Financial difficulties do not exist, since the loan is firmly subscribed by the leading houses, and did not come to the market only because of our loan! Hence Rothschild's enmity towards our loan; he is very heavily engaged with Union preference shares. Müller appears to be less good than his reputation!"

It is characteristic that this information seems to originate with Hansemann; in another letter to Goose of 11 November 1874, Meyer reported Russell's own account, which was much less highly coloured, did not blame Müller, and merely stated that Russell was going to become a director at the Union, but retain at the same time his position at the Disconto-Gesellschaft. It is notable that Hansemann's version blames Müller for the Union's problems.[50]

The appointment of Russell set the scene for the 1875 reorganization of the Union. I have already discussed the financial aspects of this reorganization; it also involved a re-arrangement of the management structure. The new structure increased the autonomy given to the individual works. The Union was split into five divisions:

1) Coal Mining ("Glückauf" and "Carl Friedrichs Erbstollen")
2) Iron Ore Mining (Hasslinghausen, Othfresen, and Bredelar)
3) Iron and Steelworks in Dortmund and Aplerbeck
4) Iron and Steelworks in Horst

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50. Scheibler and Wülfrath, Westdeutsche Ahnentafeln, p. 221; Carl Meyer, Berlin, 3 November 1874 to Sophus Goose; H.A. Krupp Az. WA IV 1439, fols. 24-25; Meyer, 11 November 1874 to Goose, H. A. Krupp, Az. WA IV 1462 fol. 7.

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5) Iron and Steelworks Henrichshütte

Each division had its own director, and its own profit and loss account. The Svabensverke was placed under the central directorate in Dortmund, since it did not easily fit into any of the above divisions.[51]

From the summer of 1875, Müller, discouraged by his experiences, wanted to give up his post as general director. Hansemann knew this, and wanted to make it look as though the Union fired Müller, so all blame would be laid at his door. But in the administrative board Russell argued fiercely in defence of Müller, saying that Müller was the noblest character he had ever met. Wilhelm von Born commented that if anyone had spoken of his own brother in such terms it would have been excessive. So a compromise was reached, whereby Müller agreed to resign whenever the administrative board wished. Yet no successor could be found; Russell did not want the post. Müller tried to leave in March 1876, but Russell persuaded him to continue until July of that year.[52]

Müller was willing to put up with Hansemann's underhand conduct because he planned to set up an iron trading firm and was counting on the Union to become one of his leading customers. In March 1876 Louis Baare offered Müller, a distant relative of his, the post as his successor as

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51. Dortmunder Union Annual Reports 1873/74 and 1874/75; Stillich, Eisen- und Stahl-Industrie, pp. 93-94; Scheibler and Wülfrath, Westdeutsche Ahnentafeln pp. 221-222.

52. Scheibler and Wülfrath, Westdeutsche Ahnentafeln, pp. 224-226, 228-229.

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General Director of the Bochumer Verein: Müller wrote to his father that it was "a great satisfaction for me vis-à-vis the Union," and added

> "An encouraging aspect of the question at hand is the generally acknowledged high technical achievement of the Bochumer Verein, a factor which I know from my very sorry experiences to be of greatest importance."

It is interesting to know that even the Union's General Director regarded the firm as technically backward. Müller eventually turned down Baare's offer, however, and instead went through with his original plan to establish an iron trading firm. On 20 April 1876 Wm. H. Müller & Co. began operations in Düsseldorf. By April 1877 the firm had specialized in the import of Spanish iron ore. Müller's hope for business from the Union was not disappointed: in May 1877 the Union bought 2000 tonnes of Bessemer pig iron from his firm for 15,000 marks. In May 1878 the firm established a branch in Rotterdam which rose to great importance, forming part of the consortium which helped Otto Wolff to gain control of the Phoenix in the 1920's. On 1 July 1879 the firm opened a branch in Ruhrort; Müller died on 30 May 1889. After his death Russell praised him as "upright, worthy, loyal and clever" (tüchtig, brav, treu, und genial).[53]

Russell was in part compensated for the thankless task of Dortmunder Union General Director by being made a partner

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53. Scheibler and Wülrath, Westdeutsche Ahnentafeln, pp. 226-233, 240-241; Walther Herrmann, "Otto Wolff" in: Rheinisch-Westfälische Wirtschaftsbiographien (Münster/Westphalia, 1962) vol. 8, pp. 140-141.

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in the Disconto-Gesellschaft; Carl Meyer reported it thus to Sophus Goose on 8 March 1876:

> "Our friend Russell has been unanimously elected as the fourth partner of the Disconto-Gesellschaft! There is music in that! He is thereby assured of an income of 120,000 to 180,000 marks. I heartily do not grudge it to this delightful man!"

Russell stayed at the Union until 1881.[54]

Russell was then succeeded by a manager from the Prussian state railways, Friederich Bail, who quit after six months "for personal reasons" - curiously, the Disconto-Gesellschaft did not take his sudden retirement badly, because Bail retained his posts on the supervisory boards of the Disconto-Gesellschaft and the Gelsenkirchener Bergwerks-Actien-Gesellschaft. Bail was succeeded as General Director by the Regierungsrath R. Seebold, who only lasted until 1885. Oskar Stillich has rightly criticized the appointment of bureaucrats to the post of General Director, when what was needed was a technically trained manager.[55]

The Union finally obtained a technically trained General Director in 1885, with the appointment of Hermann Brauns. Brauns worked at Krupp for ten years, and then joined the Georgsmarien-Hütte in Osnabrück. In 1877 he came to the Union as its technical director. In 1885 he became General Director, a post he held until 1907. He looked more

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54. Carl Meyer, Berlin, 8 March 1876 to Sophus Goose in Essen, H.A. Krupp, Az. WA IV 1439 fol. 134.

55. Stillich, Eisen- und Stahl-Industrie, p. 98; Gelsenkirchener Bergwerks-Aktien-Gesellschaft 1873-1913 (Düsseldorf, [1913]), Anlage 5; Disconto-Festschrift, p. 272.

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like a philosophy professor than a man of iron and steel. Judging by results - the severe reorganizations of 1896 and 1902 - he was not a success. It would be unfair, however, to do Brauns the same injustice which was done by Müller, and blame him for technical and financial problems which lay beyond one man's power to cure. In fact, we can ascribe two notable innovations to him. Brauns pioneered the use of ground Thomas slag as a fertilizer. Secondly, as president of the Dortmund Chamber of Commerce from 1891 until 1905 (the longest serving president in its history) Brauns successfully campaigned for the construction of the Dortmund-Ems canal. This canal was originally intended to assist the coal industry to export its production, but when it was completed in 1899 the coal industry already had a more than adequate market in the iron industry of the Ruhr. The iron industry, on the other hand, found domestic German iron deposits steadily diminishing and was importing more and more from overseas, in particular Sweden and Spain (which for the Ruhr were always more important sources than Lorraine). When the Dortmund-Ems canal opened in 1899, a canal which had been planned originally to assist the collieries to export coal found a new purpose in enabling the iron industry to import ore. Brauns also helped set up the canal shipping company,the Westfälische Transport-AG, and the first ship to bring ore from Emden to Dortmund bore his name. Although the steelworks at Dortmund could never enjoy the transport advantages which plants on the Rhine at Duisburg or Rheinhausen do, the Dortmund-Ems canal gave

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steelmaking in Dortmund a new viability. It was Brauns' greatest legacy. Although Brauns did not succeed in making the Union into a profitable company, he did make a number of contributions which did a great deal to foster Westphalian heavy industry.[56]

Brauns was succeeded by a former civil servant: the Regierungs- und Baurath H. Mathies. Another source for Dortmunder Union managers, besides the Prussian bureaucracy, was the Disconto-Gesellschaft itself, whence came the Union directors Moritz Ottermann and Ernst Schweckendieck. (Ottermann also served as a manager of the colliery "Adolf von Hansemann" from 1877 until 1896).[57] In this context it is worth remarking that the Disconto-Gesellschaft itself had a very bureaucratic style of management. No doubt the public sector, and bureaucratically managed banks, can harbour notable managerial talents; but chances are these men were like fish out of water. They often had no technical training: Brauns and Mathies (who was a Baurath, which implies an engineer's training) were exceptions. Bureaucrats and Berlin bankers could not know the peculiarities of the Ruhr landscape, which can be a very idiosyncratic society, with its own customs: Ruhr

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56. Dortmund-Hörder Hüttenunion 1852-1952, pp. 58-59; Steller, Führende Männer, p. 27; IHK Dortmund 1863-1963 pp. 111-112.

57. Disconto-Festschrift p. 243; Saling's Börsen-Papiere 34th edition 1910/1911 p. 867; Steller, Führende Männer, p. 27; Die Steinkohlenbergwerke der Vereinigte Stahlwerke A-G. Die Schachtanlage Adolf von Hansemann in Dortmund-Mengede (Essen, 1933) p. 37.

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industrialists often outdrink Berlin bankers.[58] Bureaucrats could not but lack the shrewdness and nimbleness of the autochthonous Ruhr industrialist.

It is easier to demonstrate that, whatever the quality of the managers the Union retained, the Union could not hold onto many unquestionably talented men. Müller is a case in point. The end of the Müller era did not see only his departure: Adolf Kirdorf left on 30 March 1875 to become a director of the Aachener Hütten-Actien-Verein and successfully reorganized it. Müller was a friend of the Kirdorf family, and helped both of the brothers Adolf and Emil Kirdorf on their illustrious careers.[59]

Two other talented men who left the Union were Caspar Heinrich Jucho and August Klönne, who came out of the company's bridge-building division. Caspar Heinrich Jucho, who died in 1906, was a bridge-building engineer who worked at both he Aachener Hütten-Actien-Verein at Rothe Erde and at the Union, which he left in 1877 to set up the firm Dortmunder Brückenbau C.H. Jucho. He was unusual in being a member of the Radical Party (Freisinn) at a time when all Ruhr industrialists voted National Liberal. His son, Dr.-Ing. Heinrich Jucho, became president of the Dortmund Chamber of Commerce and Industry.[60]

The Klönne family comes from Hamm: its most famous

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58. Maximilian Müller-Jabusch, Franz Urbig. Zum 23. Januar 1939 ([Berlin], 1939) p. 33.

59. Wilhelm Debus, "Adolf Kirdorf" in: Deutsche Biographisches Jahrbuch vol. 5. p. 225.

60. IHK Dortmund 1863-1963, pp. 107-108.

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representative was the banker Carl Klönne of the Schaaffhausen'scher Bankverein and the Deutsche Bank. August Klönne was born at Mülsborn near Meschede. He worked at the Union as an engineer, where he specialized in the by-products of coke production, especially gas. He worked on the production, purification, and storage of gas, and the construction of gas furnaces. He patented some of his inventions and left to set up his own firm in 1879, which seems to have concentrated on bridge-building instead of gas engineering: Aug. Klönne, Eisenhoch- und Brückenbau of Dortmund. His son, Moritz Klönne, also served as president of the Dortmund Chamber of Commerce and Industry.[61]

To conclude: although it is quite possible that the Union was plagued by bad management, the evidence does not permit us to be more definite. In fact, some of the directors like Müller and Brauns displayed great talents, yet the problems of the Union were too much for them. It is clear, however, that workforce and management alike were very demoralized. The Union could not build up a core workforce; nor could it retain talented managers, who in one instance (Adolf Kirdorf) left for another iron and steel firm, but in three other instances (Müller, Jucho, Klönne) left to go into business for themselves. This is a very striking development for heavy industry, where one might expect the urge to self-employment to be relatively suppressed. These men sought to break away from an unsuccessful enterprise, but they sought independence even

61. IHK Dortmund 1863-1963 p. 108.

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more. This the Union could not offer; it was tied to the apron-strings of the Disconto-Gesellschaft. The rough-edged men of the Ruhr did not care to submit themselves to the orders of a Berlin bank. The Disconto-Gesellschaft had to settle for meeker (and presumably less talented) characters: former civil servants and Disconto-Gesellschaft employees. Dynamic entrepreneurs from the Revier (a traditional nickname for the Ruhr, which indicates its exclusive character) do not like to have to submit to the nannying of a distant bank - especially when that bank has no hope of understanding the complicated and idiosyncratic business of coal, iron, and steel.

G. The Henrichshütte 1872-1904.

Another problem of the Union was the crippling of the outlying works as Dortmund was developed at their expense. This section will examine the stunting of the peripheral works, using the Henrichshütte as an example. The stunting of these works is a strong indication that the merger was a mistake from the start.

The Henrichshütte originally produced railway rails. With the collapse of this market after 1873, the works looked for new areas of activity and stopped making rails. For a time - to the great annoyance of Alfred Krupp - it manufactured guns. In 1875/76 the Henrichshütte produced 109,632 guns of various types. But this business was soon shut down for lack of orders, and the Henrichshütte expanded its foundry and machine shop. The works concentrated on the production of quality plate. The Union did make some

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improvements. In 1874 the blast-furnace works got a new blowing apparatus; in 1876 a new rolling mill began operation; three years after that two new blast-furnaces were blown in. But these improvements were more than outweighed by the catastrophic decision of 1880/81 to concentrate all Bessemer steel manufacture at Dortmund. The Henrichshütte's Bessemer works was closed. This brought about ludicrous consequences. When Oskar Stillich saw the Henrichshütte (he wrote in 1904) the works had two blast-furnaces. One of them was new, since it had been built after an explosion destroyed a blast-furnace in 1900. It produced 200 tonnes of pig iron a day. The second antique furnace (presumably dating from 1879) produced only 120 tonnes of pig iron a day. An ancient bellows had to be operated by four to six men; at other works, this was done by electricity. The pig-iron flowed into the foundry hall, was there allowed to harden and then hacked by hand into smaller pieces, some of which were sent to Dortmund, the majority sold as they were, because the Henrichshütte had no Bessemer works. Instead of the ideal process of pig-iron being made into steel in one heat, the pig-iron had to be transported 30 kilometres to Dortmund, reheated, made into ingot steel, and then transported back another 30 kilometres to the Henrichshütte to be made into plate. Instead of this complicated process the Henrichshütte continued to make steel by the antiquated process of puddling in 1902/03. It is true that the Bessemer process did not immediately replace all puddling works, and in some places steel could

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still be made profitably by puddling for many years. The last puddling works in the United States survived until 1948. But it is one thing to puddle steel in the American backwoods, and another thing to puddle steel in the Ruhr in 1902, in the centre of one of the densest railway networks in the world, where Bessemer works lie cheek by jowl.[62]

In the summer of 1893 the Henrichshütte began to seek out a new market for its products by commencing the manufacture of welded pipe. Much of this was made into oil drums for the Deutsch-Amerikanische Petroleumgesellshaft, a subsidiary of Standard Oil.[63]

The year 1900 began with a catastrophe at the Henrichshütte: Blast Furnace I exploded. The bodies of six workers were taken dead out of the ruins. This accident, the crisis of 1900/01, and the 1902 reorganization of the Union made the Union decide to spin off the Henrichshütte as a separate public limited company with a capital of 10 million marks. An EGM of the Union on 9 July 1902 approved this. Thus after three decades the Union broke the bands of the merger which had led to its creation - symbolically, in the last year of the life of Adolph von Hansemann. The Union justified its decision in these words:

> "The merger of the Dortmund works with the works Henrichshütte and Horst plus their mines, although it was very well considered at the time, has not

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62. Stillich, Eisen- und Stahl-Industrie, pp. 114-116; Henrichshütte 1854-1954 pp. 42-45; Alfred Krupp, Essen [1874] to Sophus Goose (?) in: H. A. Krupp, Alfred Krupps Briefe und Niederschriften vol. 13: Das Jahr 1874 fol. 2.

63. Stillich, Eisen- und Stahl-Industrie, p. 116; Henrichshütte 1854-1954, p. 45.

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> proved itself over the course of time and under changed circumstances. In particular, ingot (Bessemer) steel has gradually driven out wrought (puddled) iron and the consequence for the Union has been a total dislocation of its manufacturing programme. The works in Horst and the Henrichshütte were chiefly based on the puddling process. This had to be shut down in part, in part substantially reduced and the steel production, which can only be operated profitably on a large scale, concentrated at one place. Although great sums were expended to suit the works' equipment to the changed circumstances, the evil remained that the development of the works was hindered by the need on all sides to take account of the assigned manufacturing programme. In addition the free action of the works was especially hindered in the commercial area because of the constantly expanding development of syndicates and conventions in the iron industry. The need for one works to belong to such associations would hinder another works from exploiting the advantages which fell to competing free works without effort. The conflict of interests which resulted from this could often be settled only at the cost of sacrifices for the entire enterprise."[64]

In the end, however, the Henrichshütte was not spun off but instead was sold to the locomotive firm Henschel & Sohn of Cassel. Henschel was pursuing vertical integration because of increasing cartellization, and the Henrichshütte was able to make rails, railway tyres, boiler-plate and other railway material. On 24 March 1904 an EGM of the Union approved the sale of the Henrichshütte for 9.4 million marks, with effect from 1 March 1904. Henschel paid 4.1 million marks down in cash and promised to pay the rest by 16 April 1909, paying 4½% in the interim on any outstanding balance. Since the Henrichshütte was capitalized in the Union's books at

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64. G. D. Baedeker, ed. Jahrbuch für den Oberbergamtsbezirk Dortmund. Ein Führer durch die rheinisch-westfälischen Berg- und Hüttenwerke und Salinen in wirtschaftlicher und finanzieller Beziehung vol. 6: 1901-1904 (Essen, 1905) pp. 539-540; Henrichshütte 1854-1954 p. 46.

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11,278,641 marks, the Union wrote off 1,878,641 marks because of this book loss. Two points are worth noting. First, the capitalization of the Henrichshütte increased under the Union's management, from 7½ million marks in 1872 to 9.4 million marks in 1904. Secondly, this sale to Henschel did not include the colliery "Carl Friedrichs Erbstollen" - which was included in the original 7½ million marks, and which by 30 June 1909 was capitalized in the Union's balance sheet at 3,865,843 marks. This takes no account of, however, amounts written off against the Henrichshütte during the various reorganizations, such as 2,371,954 marks during the reorganization of 1896 alone.[65] The problems of the Union's peripheral works are better reflected in the capitalizations of the other works:

Capitalization of the Union's Works (in marks)

	A 1872	B Sold for (year)	C 30 June 1909	D Total (cols B + C)	Increase (Decrease)
Dortmund	9,000,000	-	33,272,766	33,272,766	270%
Glückauf-Tiefbau	6,000,00	-	4,850,942	4,850,942	(19%)
Othfresen	3,000,000	200,000 (1883/84)	-	200,000	(93%)
Bredelar	4,560,000	400,000 (1884/85)	186,738	586,738	(87%)
Svabensvk.	2,040,000	250,000 (1879)	-	250,000	(88%)
Horst	7,500,000	-	2,445,177	2,445,177	(67%)
Henrichs-hütte	7,500,000	9,400,000 (1904)	3,865,843	13,265,843	77%

NOTES: The blast-furnaces and the foundry at Bredelar were sold off in 1884/85, but the iron ore mines retained.
The Henrichshütte was sold off in 1904, but its colliery, "Carl Friedrichs Erbstollen", was retained.
SOURCE: Annual Reports of the Dortmunder Union; Saling's Börsen-Papiere.

65. Jahrbuch für den OBAB Dortmund vol. 6: 1901-1904 pp. 539-540.

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The table above makes evident how the Dortmund works expanded at the expense of the other works; and shows how the development of the Union made nonsense of the original merger.

The Henrichshütte became part of the Thyssen group after 1945 and experienced an unexpected new prosperity; but the fall of the dollar in recent years has plunged the German steel industry into crisis, and this historic steelworks is now being closed down.

H. The Union's Coal Supplies.

As is indicated by the rubrics Othfresen, Bredelar and Svabensverke in the table above, the Union had terrible luck with its iron ore supplies. But in this it was not alone; few Ruhr ironworks made successful iron ore acquisitions, partly because German iron ore deposits (with the partial exception of the Siegerland) did not live up to their promise.[66] The Union was set apart, however, by the problems it experienced with its coal supplies; and some of these problems can be ascribed to bad management decisions, rather than just to bad luck.

Oskar Stillich comments that although the Union at the beginning of the twentieth century had a deficit in iron ore, it had a surplus in coal. But this surplus was not the benefit it appeared, since most of this was described as Förderkohle - an average grade which was less valuable than the specialized higher grades. In particular, the Union did

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66. On the Union's iron ore problems, see Stillich, Eisen- und Stahl-Industrie, pp. 100-105.

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not produce enough "fat coal" (as some bituminous grades are called on the Continent: Fettkohlen or houilles graisses) which it needed to make coke. In 1902 the Union had to buy 80,000 tonnes of coke for the Dortmund works alone. Although the Union appeared to produce more than enough coal for its own needs, Stillich claims with good reason that the Union produced the wrong kind of coal, and was still dependent on outside suppliers.[67]

The Union had two collieries when it was founded in 1872: "Carl Friedrichs Erbstollen" and "Glückauf Tiefbau". Neither was a bad property, since they were only shut down in 1924; other mines in the southern Ruhr where the seams are thin had to be shut down much earlier, before the First World War. The Union did, however, suffer a drastic fall in its coal production: from 577,465 tonnes in 1872/73 to 228,651 tonnes in 1879/80.[68] The Union acquired three more collieries: "Brockhauser Tiefbau" in 1887, "Adolf von Hansemann" in 1899, and "Kaiser Friedrich" around 1909. The evidence suggests that the acquisition of "Brockhauser Tiefbau" was a mistake, because it was a mine in the southern Ruhr on the brink of closure; but most of its coal had been sold to the Henrichshütte before 1887, and it did border on and round out "Carl Friedrichs Erbstollen". The acquisition of "Kaiser Friedrich" is less defensible, because it produced anthracite: useless for an iron and

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67. Stillich, Eisen- und Stahl-Industrie, pp. 105-106.

68. Ibid, p. 106.

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steel company which needed coke.[69]

The acquisition of "Adolf von Hansemann" was more complex and deserves more attention because of the Disconto-Gesellschaft's involvement with this mine. In 1873 Friedrich Grillo and the Disconto-Gesellschaft purchased the collieries "Rhein—Elbe" and "Alma" from the Société des Charbonnages de Gelsenkirchen of the Belgian entrepreneur Charles Detillieux. At the same time Grillo and the Disconto-Gesellschaft also acquired the panels which eventually became the colliery "Adolf von Hansemann" in Mengede from the Kommanditgesellschaft auf Aktien A. Boucard et Compagnie, Gesellschaft der Kohlenbergwerke in Mengede. Detillieux seems to have also been behind the Mengede company because there were no fewer than four investors in the Mengede mines who sat on the supervisory board of the Société des Charbonnages de Gelsenkirchen, and André Boucard, the active partner (Gérant) of the Mengede company, was the secretary of the Gelsenkirchen company.[70]

The Disconto-Gesellschaft bought the Mengede panels for 810,000 marks and then formed the Mengeder Bergwerks-Actien-Gesellschaft with a share capital of 6 million marks, 40% paid up. In 1875 the panels were consolidated under the

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69. Gebhardt, Ruhrbergbau, pp. 235-236, 241-242.

70. Schachtanlage Adolf von Hansemann, pp. 3, 9-10; Rondo E Cameron, France and the Economic Development of Europe 1800-1914. Conquests of Peace and Seeds of War (Princeton, 1961) pp. 374-375, 389-395; Hans Seeling, Wallonische Industrie-Pioniere in Deutschland. Historische Reflektionen (Liège, 1983) pp. 132-133, 158; Société des Charbonnages de Gelsenkirchen Detillieux et Cie., Statute (Paris, 25 April 1872) p. 2 in: BBA, GBAG Archiv, Az. 1 10 00, Nr. 1.

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name "Adolf von Hansemann". Sinking of the first shaft began on 9 June 1873, but took almost until the end of the century to complete, and was punctuated by numerous accidents. At the beginning of August 1876 the bridle cable broke on the winding cable, and a large water container (Wasserkasten) and a bucket fell into the shaft. The sinking crew retrieved the bucket, but the water container caught on the pit frame. The company had to stop sinking the shaft, let the shaft flood, laid off all workers, and sold all superfluous machinery.[71]

The catastrophe which hit the mine was not without its effect on the Disconto-Gesellschaft itself. Its holdings of unlisted securities for which it had set aside no special reserves totalled 568,558.90 marks as of 31 December 1876; 178,716 marks of this were shares of the Mengeder Bergwerks-Actien-Gesellschaft, written down to half of the amount paid on them. As of 31 December 1876 40% of the share capital had been called up; the Disconto-Gesellschaft had therefore paid in 357,432 marks, so it owned a nominal 893,580 marks worth of shares. The loss on all these shares (not just Mengede, but at least two other holdings - bonds of the Crefeld-Kempen District railway and shares of the Deutsch-Belgische La Plata Bank - as well) totalled 424,962 marks for 1876. Clearly the Mengeder Bergwerks-Actien-Gesellschaft made its contribution to 1876, the annus terribilis of the Disconto-Gesellschaft, when neither its partners nor its supervisory board received any

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71. Schachtanlage Adolf von Hansemann, pp. 9-10, 20.

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compensation.[72]

Sinking resumed in 1882. To clear out the shaft, the bottom was filled with concrete, the shaft drained, and then - with great difficulty, naturally - the concrete and the water container embedded in the concrete dug out together. Work proceeded slowly with frequent floodings at high rates of inflow. One problem was that the tubbings supplied from the Dortmunder Union, which were left over from 1876, were - partly because of the poor quality of the iron, partly because at 45 millimetres they were too thin - too weak for the water pressure of 17 atmospheres. In Spring 1886, when the shaft was 230 metres below the surface it hit a cleft where the water flowed in at the rate of 22 cubic metres a minute, so none of the pumps could handle it. After consulting with mining experts, the company decided to let this first shaft flood and sink another one. Sinking of the second shaft began on 2 October 1888, and in one of those paradoxes which typifies mining, was as uneventful as the first shaft had been difficult. All water flows were easily mastered, and on the night of 3/4 May 1891 the shaft reached the coal measures at a depth of 256 metres below the surface. The shaft was sunk further to 450 metres below the surface, and the first and second levels installed at 299 and 439 metres. In 1896 Shaft 2 began mining coal to cover

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72. Schachtanlage Adolf von Hansemann, p. 33; Disconto-Gesellschaft Annual Report, 1876 p. 8, Deutsche Bank AG, Historisches Archiv.

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the mine's own requirements.[73]

A colliery needs at least two shafts for the sake of ventilation and safety, and Shaft 3 was begun in August 1894. Unfortunately the sinking of the third shaft was accompanied by a macabre accident. The third shaft was wet and often flooded. While drilling at the rock, Wilhelm Kürten, a member of the sinking crew, got his foot stuck in a borehole, and could not remove it. At the same time the shaft began to flood and the rest of the crew evacuated; Kürten drowned. By the time the shaft was drained again his body had decayed into a shapeless mass. Because the shaft was so wet, on 5 February 1896 sinking by hand stopped and sinking continued using the Kind-Chaudron process. The Kind-Chaudron process was invented by the German Gustav Kind and perfected by the Belgian Joseph Chaudron when the latter was sinking "Dahlbusch". Curiously, both Kind and Chaudron were investors in "Adolf von Hansemann". The Kind-Chaudron process essentially involves lowering a moveable inner sleeve into the mine-shaft, inside of which excavation can continue undisturbed by water breaks. The opening of the coalfields in Kent, where German investors played an important role, was facilitated by use of the Kind-Chaudron process. Shaft 3 of "Adolf von Hansemann" reached the coal measures on 5 December 1896. After construction of the levels, a cokery and other surface installations, the mine

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73. Schachtanlage Adolf von Hansemann, pp. 21-29 and table facing p. 62.

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at last commenced full production on 10 June 1899.[74]

We can date an interest by the Dortmunder Union in "Adolf von Hansemann" at least from 1892, when Hermann Brauns, the General Director of the Union, joined the supervisory board of the Mengeder Bergwerks-Actien-Gesellschaft. The Mengeder Bergwerks-AG soon ran into the problem that it had expended its entire six million marks share capital on the mine by the first quarter of 1893. After that the company borrowed from the Disconto-Gesellschaft. To raise new funds,the Mengeder Bergwerks-Actien-Gesellschaft was liquidated and its assets passed to the Gewerkschaft der Mengeder Steinkohlengruben. All the existing shareholders of the Mengeder Bergwerks-AG accepted the offer to exchange ten shares for one Kux of the new company. Of the 1000 Kuxen of the new Gewerkshaft, the Union already had more than half - 501 - and the Disconto-Gesellschaft 312. A Gewerkschaft has the advantage over an ordinary joint-stock company that it can raise new funds through Zubussen from its shareowners (called Gewerken). The Gewerkschaft Mengeder Steinkohlengruben accordingly raised another 6½ million marks through Zubussen which it used to complete the mine. The mine accordingly cost 12½ million marks to complete.[75]

In 1899 the Union bought the mine for 9 million marks.

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74. Schachtanlage Adolf von Hansemann, pp. 29-32 and table facing p. 62; Wilhelm Kesten, Geschichte der Bergwerksgesellschaft Dahlbusch (Essen, 1952) pp. 68-69; H. Stanley Jevons, The British Coal Trade (London, 1915) pp. 163, 191-192.

75. Schachtanlage Adolf von Hansemann, pp. 36, 48-49.

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The Union reached this price by the following line of reasoning: the shareholders of the Mengeder Bergwerks-AG had expended 6 million marks on sinking the mine; the Gewerkschaft Mengeder Steinkohlengruben had called up another 6½ million marks in Zubussen. But of this total 12½ million marks, money spent on the first shaft and on the interest on the share capital of the Mengeder Bergwerks-AG was literally money down the drain; the Union calculated that at 3½ million marks. The Union paid 9 million marks, or 9000 marks worth of Union shares per Kux, if the Gewerken chose shares instead of cash, which they all did. The Union only had to acquire 499 Kuxen, since it already held 501. The new Union shares which were thus not required were underwritten by the Disconto-Gesellschaft at 115% and offered to the existing shareholders of the Union at the same price.[76]

Otto Lindenberg has criticized this transaction because although the Union paid 9 million marks at par, Union shares were fetching 130% in the market, making its offer really worth 11.7 million marks. (On the last stock market day of 1899, Union class "C" shares were quoted at 133¼%.) Another criticism I would make is that if we examine the balance sheet of the Mengeder Bergwerks-AG of 31 December 1886 - one year before the second shaft was begun - we find 3.9 million marks already called up, or nearly half a million marks more than the Union's figure. This evidence

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76. Schachtanlage Adolf von Hansemann, pp. 48-49; Saling's Börsen-Papiere 34th edition 1910/1911, pp. 870-872.

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suggests that Lindenberg is right in asserting that the Union paid too much for "Adolf von Hansemann". A more prudent estimate would have been to calculate the amount lost down the first shaft and in interest at 4 million marks, and to offer the shares to the Gewerken at 115%, not at par. This would have cost the Union 7.4 million marks worth of shares - a million and a half less than it actually paid.[77]

There is another question: would the Union have bought "Adolf von Hansemann", if the Disconto-Gesellschaft had not virtually absolute control over the Union? It seems unlikely. It is a mistake to assume that numerous accidents during the sinking process mean that a mine will be a poor asset and accident-prone - the histories of "Rhein-Elbe" and of "Adolf von Hansemann" itself show this is not the case - but this insight was not always shared by contemporary managers in heavy industry. That the Union expected the worst from its new acquisition is indicated by its action after the accident of 1901, when the Union decided to sell "Adolf von Hansemann" back to the Disconto-Gesellschaft. The circumstances thus suggest that the Union acquired "Adolf von Hansemann" under compulsion from the Disconto-Gesellschaft. There is another curious aspect to the Union's acquisition of "Adolf von Hansemann". This property never seems to have been offered to the Gelsenkirchener Bergwerks-Actien-Gesellschaft, although it

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77. Lindenberg, Spekulationsbank, p. 38 note; Schachtanlage Adolf von Hansemann p. 35.

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did border on one of Gelsenkirchen's collieries, namely "Erin". Possibly Emil Kirdof did not want to bite into the poison fruit of "Adolf von Hansemann" - yet the histories of many of Gelsenkirchen's other acquisitions were no more immaculate. The Union's acquisition of "Adolf von Hansemann" crossed Gelsenkirchen's interests in one particular: this acquisition enabled the Union to become a vertically integrated steel-to-coal operation, a Hüttenzeche, which was outside the control of the Rheinisch-Westfälisches Kohlen Syndikat (The Rhenish-Westphalian Coal Cartel), a creation of Kirdorf and Gelsenkirchen. In 1892-1893 the Disconto-Gesellschaft put its Berlin offices at the disposal of the negotiators of the coal cartel; yet at the same time it was providing the Union with the means to break free of the cartel. The Disconto-Gesellschaft tried to suggest the best strategy in the case of each client and tried to be all things to all its clients. The Union, being a very weak company, tended to get stuck with the less attractive pieces of business.

On 8 January 1901 a fire-damp explosion at "Adolf von Hansemann" killed two and wounded two; the Union had to spend 2¼ million marks to repair the damage. The Frankfurter Zeitung announced that the mine was only expected to be profitable from 1903 on. This was too much for even the Union to stomach, and the general meeting of the Union on 6 December 1901 voted to sell "Adolf von Hansemann" for 9 to 10 million marks; one account had it that the lucky purchaser of the mine was to be the Disconto-

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Gesellschaft itself. But then the Union had second thoughts and realized that its iron and steelworks in Dortmund were so extensive that it could not dispense with ownership of its own coal mines and independence from the cartellized coal market. Instead of selling "Adolf von Hansemann", the Union embarked upon the reorganization of 1902, reduced its share capital and sold off the Henrichshütte. The Disconto-Gesellschaft did have the decency to pay the Union 700,000 marks compensation for the damage - although a stricter critic would demand five times that amount in compensation, namely 1½ million marks initial overpayment, plus 2¼ million marks damage from the subsequent explosion.[78]

Yet after this accident "Adolf von Hansemann" confounded the sceptics and became a very good property. One great improvement was the installation of new electric pumps which could lift 11 cubic metres of water a minute, versus a water inflow of only 2½-3 cubic metres per minute. In 1901/02 the mine raised 138,499 tonnes of coal, in 1902/03 265,301 tonnes; in 1908/09 422,007 tonnes of coal as well as producing 243,911 tonnes of coke, 3,288 tonnes of ammonia, and 7,511 tonnes of tar. "Adolf von Hansemann" accounted on its own for 45% of the Union's total coal production in 1908/09 of 939,857 tonnes, and was even more

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78. E.M., "Eine Wetterexplosion im Förderschachte der Zeche 'Adolf von Hansemann'" in: Berg- und Hüttenmännische Zeitung (Leipzig, 15 February 1901) vol. 60, No. 7, p. 85; Stillich, Eisen- und Stahl-Industrie pp. 107-108; Lindenberg, Spekulationsbank pp. 36-37; Schachtanlage Adolf von Hansemann, table facing p. 62; Jahrbuch für den OBAB Dortmund, vol. 6, pp. 539-540; Saling's Börsen-Papiere 34th edition 1910/1911 p. 868.

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dominant in coke production: 73% of a total 334,422 tonnes. This single acquisition, in spite of the most inauspicious beginnings possible, turned around the Union's coal situation from acceptable in 1899 to comfortable by 1909. In respect of coal, at least, Stillich's picture of the Union was blacker than it needed to be because the last figures available to him were 1902/03, before the new colliery could display its virtues. "Adolf von Hansemann's" greatest virtue was that it lay in the band of fat coal mines near the Lippe which were ideal for coking coal, as opposed to the Union's other collieries, which were located further to the south and had little or no fat coal reserves. In spite of the worst intentions of the Disconto-Gesellschaft, the Union's purchase of "Adolf von Hansemann" actually turned out for the best. "Adolf von Hansemann" became one of the top coal producers in the Ruhr, and by the 1960's had five shafts, and then was still in production.[79]

The acquisition of "Adolf von Hansemann" changed the Union's coal position so radically that I shall sum up this section in two parts: first, I shall discuss the four other mines, and second, "Adolf von Hansemann".

With hindsight, it is clear that 1872 was too early a date to form a vertically integrated coal-to-steel company in the Ruhr, because many of the northern fat coal mines - such as "Alma", "Fürst Hardenberg", "Minister Stein", "Erin" - only commenced production in the 1870's. A company

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79. Saling's Börsen-Papiere 34th edition 1910/1911 pp. 867-872; Schachtanlage Adolf von Hansemann, table facing p. 62.

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formed in 1872 would have to be based upon the collieries of the southern Ruhr, which did not have abundant supplies of the fat coals needed to make coke. This was exactly the Union's problem. "Glückauf Tiefbau" was slightly better in this respect than the other mines. One of the most peculiar aspects of the Union's coal policy is that two of the three collieries it purchased were not in the fat coal fields of the north, but rather in the anthracitic fields of the south, namely "Brockhauser Tiefbau" and "Kaiser Friedrich". The Union could say in defence of the acquisition of "Brockhauser Tiefbau" that it was cheap (300,000 marks), it had hitherto supplied the Henrichshütte, and that it rounded out the panel of "Carl Friedrichs Erbstollen". None of this could be said in favour of the acquisition of "Kaiser Friedrich". Perhaps that acquisition can only be understood as a last-minute panic, a Torschlusspanik by the iron industry which feared that soon there would be no collieries to acquire and it would be delivered to the tender mercies of the coal cartel; so the Union bought "Kaiser Friedrich", even though its anthracite coals were unsuited to the Union's requirements. So far as these four mines are concerned, we may say that the Union's mines were too old (all except "Kaiser Friedrich" went back to the eighteenth century, which would mean narrow levels and galleries preventing the installation of modern mining equipment) and produced the wrong type of coal. Acquisitions only made this problem worse, since in respect of fat coals "Brockhauser Tiefbau" and "Kaiser Friedrich" were even more

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poorly placed than "Carl Friedrichs Erbstolen" and "Glückauf Tiefbau". Interestingly, the Union's successor company, Hugo Stinnes' Deutsch-Lux, also had the weakness of having collieries chiefly in the southern band of anthracite producers; but in the case of Deutsch-Lux the problem was remedied by a merger in 1920 with the biggest owner of fat coal mines, the Gelsenkirchener Bergwerks-Actien-Gesellschaft.

The acquisition of "Adolf von Hansemann" balanced and cancelled out many weaknesses. In theory, the Dortmunder Union should have suffered from being compelled to acquire a colliery the Disconto-Gesellschaft did not want. The owner of "Adolf von Hansemann", the Mengeder Bergwerks-AG, had already suffered from the Disconto-Gesellschaft's predilection for confining business within its own group of companies, its "zaibatsu": the sinking of "Adolf von Hansemann" was delayed because the mine used poor quality iron tubbings supplied by the Dortmunder Union. Yet such is the aleatory nature of mining that "Adolf von Hansemann" turned out to be a very valuable property. It raised a large amount of coal overall and also produced much coke, and soon was supplying the Union with nearly three-quarters of its coke supplies.

Finally, as opposed to the iron ore mines, where the Union suffered from bad luck more than anything else, in the instance of the coal mines we can pinpoint a number of inept management decisions. The Union's management decided to buy "Brockhauser Tiefbau" and, even worse "Kaiser Friedrich";

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paradoxically, the Union almost sold off "Adolf von Hansemann" after the accident of 1901, and only did not do so because it had second thoughts. These actions betray an inept and haphazard style of management, with no deep understanding of the industry: the sort of management style one would expect from financiers and bureaucrats who are reacting to events rather than following a strategy.

I. Conclusion.

An analysis of the Dortmunder Union must answer two questions: Why did the Union fail? Secondly, to what extent was the Disconto-Gesellschaft to blame for the Union's failure?

The answer to the first question is itself in two parts. The first part is the various causes which brought about the Union's rapid collapse in the early 1870's. These include the initial overcapitalization of the Dortmunder Hütte, which was brought into the Union at what Strousberg said it was worth, even though it produced less than Horst and the Henrichshütte; the shopping spree the Union embarked upon at the height of the boom, which eventually led to horrendous stock losses; and the hiring of more workers at the height of the boom, who were overpaid and underskilled. One of the most remarkable causes of the Union's early losses was the deliberate policy of the Disconto-Gesellschaft, mentioned in Meyer's letter to Goose of 13 March 1876 (see above pp. 255-256), encouraging the Union to work flat out in spite of any losses, hoping that this would then cause competitors to drop out of the market.

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This policy almost certainly did not outlast the 1870's, but it would have left a heritage of profligacy.

Unlike its competitors like Krupp or the Phoenix, however, the Union did not just suffer during the 1870's: the reorganizations of 1875 and 1878 were followed by two more in 1896 and 1902. The Union's problems were more deeply rooted than such temporary problems as stock losses which brought about the initial catastrophe. The merger was a mistake from the start. The works were too dispersed, spreading from Horst, Hattingen, Dortmund, Aplerbeck and Hasslinghausen in the west to Bredelar and Othfresen in the east and Svabensverke in the north. Geographical dispersion can be fatal in heavy industry where the products are difficult to transport. All these works except Dortmund, Horst, and Hattingen were shut down by the end of the century. Although Horst and the Henrichshütte in Hattingen survived, they were crippled by the concentration of steel production at Dortmund in the 1880's. Another problem was that the Union appears to have been technically backward compared with its competitors like the Bochumer Verein: that was at least the opinion of Wilhelm Heinrich Müller (see above p. 281). A third problem was that Dortmund, until the opening of the Dortmund-Ems canal in 1899, was a very unsuitable place to establish a Bessemer works, since it was not possible to bring in the iron ore by water, as it is at Duisburg on the Rhine. Krupp and Thyssen both chose to establish their steelworks at Duisburg or on the opposite shore, in Rheinhausen. (The Hoesch family was of a

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different opinion: they set up their Bessemer works in Dortmund in 1871, because of the abundant coal supplies.) A further problem was the very bad luck the Union suffered with its iron ore mines. In the case of the collieries, poor timing and mismanagement are to blame: poor timing, because the Union was founded on the basis of vertical integration before the big northern fat coal mines were opened, and what coal mines it could acquire in 1872 would have limited fat coal reserves and thus be unsuited for making coke; mismanagement, because two of the mines the Union acquired were even worse off for coking coal than its original mines, and the third fat coal mine it acquired it nearly sold again before it had second thoughts. The collieries provide us with clear episodes of mismanagement. It is more difficult to judge the Union's managers in other matters. Adolph von Hansemann sought to blame Wilhelm Heinrich Müller for the Union's problems in the 1870's - unjustly, it appears. Müller was succeeded by bureaucrats and bureaucratically trained bankers. Not enough is known about these men to condemn them outright as bad managers- and Hermann Brauns should be credited with some notable achievements, such as the Dortmund-Ems canal - but we can say that the management of the Union was so demoralized that it could not hold onto men who subsequently carved out very good careers: Adolf Kirdorf, Caspar Heinrich Jucho, August Klönne, and Wilhelm Heinrich Müller himself. The Union's workforce seems to have been similarly demoralized. The founding of the Union was also poorly timed in that 1873

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inaugurated a long stretch of declining prices lasting until 1887. This year, which S. B. Saul recommends as a more useful terminus for the end of the long decline in prices in the nineteenth century than 1896, is also better suited to the history of the Ruhr, since 1887 saw prices in heavy industry pick up again and this boom culminated in the Ruhr miners' strike of 1889.[80] The price decline penalized vertically integrated firms and assisted firms which were not so integrated, such as August Thyssen's first venture, the tube factory Thyssen & Co.[81] The problem was expressed best by Joseph Massenez, the General Director of the Hoerder Verein, before the government committee investigating the conditions of the iron industry in 1878:

> "Today nearly all those works which produce their raw materials themselves are in a far more unfavourable situation than those which merely process the materials. Today our entire industry, starting with coal and iron ore mining, operates at a loss. Those works which are situated on the most natural and solid basis, in that they produce their raw materials themselves have to struggle with vastly greater difficulties than works which, say, just manufacture steel rails and must purchase their coal and pig iron. Today we can buy our raw materials more cheaply than we can produce them ourselves."[82]

This is an important point, because many authors - Gerhard Gebhardt and Gerald Feldman, for example - have asserted that vertical integration is always to a company's

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80. S. B. Saul, The Myth of the Great Depression, 1873-1896 (London and Basingstoke, 1969) pp. 15, 17; Friedrich Artur Freundt, Kapital und Arbeit (Berlin, [1929]) p. 31.

81. Paul Arnst, August Thyssen und sein Werk (Leipzig, 1925) pp. 11 + 12 (=Ergänzungsbände zur Zeitschrift für Handelswissenschaftliche Forschung, vol. 7).

82. Stillich, Eisen- und Stahl-Industrie, p. 40.

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benefit.[83]

I would qualify this by saying that this is only true during a period of rising prices. In a period of falling prices or effective disinflation non-integrated firms are often more advantageously placed.

Finally, one of the most important reasons for the failure of the Union was that although the Union underwent numerous capital reductions - five if we include the merger into Deutsch-Lux - the Union's capital was never reduced by enough at one blow. Adolph von Hansemann did not measure up to his father David Hansemann as a company doctor: David Hansemann knew surgery had to be severe in order to succeed, and so he reduced the share capital of the Phoenix from 6 million thalers to 600,000 thalers at one stroke. Although cumulatively the Union's original share capital was reduced to 1/40 by 1910, no single reduction was severe enough.

This brings me to the second question: to what extent can the Disconto-Gesellschaft be blamed for the failure of the Union? In my opinion, much of the blame for the Union's failure can be assigned to the Disconto-Gesellschaft. First there was the Disconto-Gesellschaft's deliberate policy, mentioned in Meyer's letter to Goose, of allowing the Union to run up losses so long as it worked flat out. Among the longer term problems, the Disconto-Gesellschaft can be blamed for the geographical dispersal, to some extent for the vertical integration which was a problem in 1873-1987,

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83. Gebhardt, Ruhrbergbau, p. 213; Gerald D. Feldman, Iron and Steel in the German Inflation 1916-1923 (Princeton, 1977) pp. 15-16.

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and for the crippling of the Horst works and the Henrichshütte because these problems were the result of the original merger, and the merger was due to the impetus of the Disconto-Gesellschaft. The merger bore all the earmarks of a decision taken by a Berlin bank: it was the result of a temporary financial constellation, not the fusion of companies which actually fitted together for industrial reasons. The fall of Strousberg meant that the Disconto-Gesellschaft suddenly found itself owning both the Henrichshütte and the Dortmunder Hütte, and it deluded itself into thinking that there were other reasons in favour of a merger other than common ownership. The Disconto-Gesellschaft can also be blamed for the Union's demoralized management: talented heavy industrial managers had no desire to be tied to the apron strings of a Berlin bank, and rather than grant the Union more autonomy, the Disconto-Gesellschaft preferred to send into the management pliable government bureaucrats and bank employees. A dominant bank can cramp talented managers. This helps to explain why universal banks, and the Disconto-Gesellschaft in particular, not only financed disasters such as the Dortmunder Union, the Harzer Union, or the Commerner Bergwerks- und Hütten-Actien-Verein, but were also more likely to be involved with mediocre companies such as the Phoenix or the Union Electricitäts-Gesellschaft as opposed to the successful, but idiosyncratically managed companies in the same industry, such as the Mechernicher Bergwerks-Actien-Verein, the Metallgesellschaft, Krupp, Siemens, or

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the A. E. G. Curiously, in the one instance where it seems most likely that the Disconto-Gesellschaft did directly interfere, namely the acquisition of "Adolf von Hansemann", the acquisition turned out very well. But this was an unexpected bonus: a more likely result would be the problems "Adolf von Hansemann" itself experienced with the shoddy tubbings it was forced to buy from the Dortmunder Union in the 1870's. Finally, the decisions over the financial policy of the Dortmunder Union were entirely in the hands of the Disconto-Gesellschaft; and we can safely blame the Disconto-Gesellschaft, and Adolph von Hansemann in particular, for not carrying out a severe enough capital reduction.

It is bizarre that the Disconto-Gesellschaft stuck with the Union for so long. The most plausible explanation lies in the psychology of Adolph von Hansemann. Hansemann exercized autocratic power within the Disconto-Gesellschaft, and could be very stubborn: one can name the instance where he refused to believe that he had been swindled over some Korean gold mines.[84] Maximilian Harden has made a very perceptive comment:

> "He would have reorganized the Dortmunder Union ten times over if it had been necessary; since he was inwardly convinced that anything that he touched must eventually turn out for the best."[85]

Significantly, it was not until the last year of Hansemann's

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84. Max von Schinckel, Erinnerungen [Hamburg, 1928] pp. 253-254.

85. Dis [Maximilian Harden?], "Hansemann" in: Die Zukunft ed. Harden (Berlin, October-December 1903) vol. 45, p. 459.

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life that the Dortmunder Union took the decision to sell off the Henrichshütte, and by that time Hansemann was so broken in spirit that he did not utter a word at annual general meetings of the Dortmunder Union.[86]

The Dortmunder Union disaster is by no means unique among industrial ventures of the Disconto-Gesellschaft: if I wanted to demonstrate the Disconto-Gesellschaft's incompetence one could as well study the histories of the lead mines "Neue Hoffnung" and "Bertha Isabella", the lead mine and smelter company Commerner Bergwerks- und Hütten-Actien-Verein, the collieries of the Bochumer Bergwerks-Actien-Gesellschaft and the Mengeder Bergwerks-Actien-Gesellschaft (which I have partly discussed above), the iron ore mine Harzer Union, the Great Venezuela Railway, the Brunswick Railway Company, or Victor Popp's Internationale Druckluft- und Electricitäts-Gesellschaft. In the scale of the disaster and in its persistence the Dortmunder Union is unique. Much of the blame for this can be placed at the door of the Disconto-Gesellschaft, for putting through a merger for financial reasons, rather than industrial ones; for choosing managers who had no technical training, and demoralizing good managers through interfering in the Union's management; for interfering in technical questions, such as where to purchase tubbings; and for never carrying out a capital reduction that was severe enough.

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86. Steller, Führende Männer, p. 27.

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IV. Investments in Iron and Steel, Second Part: Relations with Krupp.

A. Krupp and the Bankers.

The experience of the Dortmunder Union might lead one to think that German banks were so generous that although they often lent to poorly-run companies, they were also very munificent towards well-run companies. This was by no means the case. The financial history of the greatest German iron and steel concern, Friedrich Krupp of Essen, provides the classic example, and has been used before by critics of the German banks.[1]

Although Krupp had contacts to other banks before 1848 - the connection with the Cologne bank J.D. Herstastt & Co. can be dated back to 1835 - Krupp's chief source of finance before then was relatives and silent partners: until 1844 Krupp's silent partner was his cousin Friedrich von Müller, after that he was replaced by the wealthy merchant Friedrich Heinrich Sölling, a partner of the firm Arnold Theodor Sölling of Essen and Rotterdam. In May 1849 Krupp began negotiations with what was to be his first important banking connection, Sal. Oppenheim jr. + Cie. of Cologne, who

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1. Jacob Riesser, Die deutschen Grossbanken und ihre Konzentration im Zusammenhange mit der Entwicklung der Gesamtwirtschaft in Deutschland (Jena, ⁴1912) p. 5 note 1 (taking issue with Alfred Lansburgh); Alfred Krüger, Das Kölner Bankiergewerbe vom Ende des 18. Jahrhunderts bis 1875 (Essen, 1925) p. 109; Dr Klara van Eyll, "Kölner Banken im 19. Jahrhundert und ihr Einfluss auf die Industrialisierung in der Rheinprovinz" in: Mitteilungen der Industrie- und Handelskammer zu Köln (1973) p. 256.

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granted him a credit of up to 30,000 thalers in November 1849. This credit was very welcome, since in the period 1848-1850 Krupp was expanding rapidly and had already spent some 16,500 thalers. But Krupp did not know how to handle his bankers and his bank accounts. What a banker regarded as a ceiling, Krupp regarded as a floor. Nor were matters assisted by Krupp's tendency to finance investment by overdrawing his accounts without warning. By October 1850 Krupp had exceeded his credit by 6,000 thalers, and Oppenheim issued a first warning. Krupp was able to reassure him by showing that he held numerous bills drawn on the Cologne-Minden Railway for supplying rails; this settled matters, since the Cologne-Minden Railway was an Oppenheim venture, Dagobert Oppenheim was the chairman of its board, and Oppenheim took care of its banking requirements; a bill on the Cologne-Minden Railway was almost as good as a bill on the house of Oppenheim. On 12 July 1855 Sölling agreed to guarantee all funds borrowed by Krupp from Oppenheim over 30,000 thalers and up to 50,000 thalers. But although the credit limit was increased yet again - to 80,000 thalers - by 30 June 1856 Krupp was in debt to Oppenheim to the amount of 97,000 thalers. The bank took the most severe line possible, refused Krupp's attempt to draw upon them for another 7,000 thalers, and threatened to take serious measures. The crisis was only settled by Sölling agreeing to increase his guarantee to 100,000 thalers. Fortunately, Krupp had some 65,000 thalers worth of bills on the Cologne-Minden railway, which, as Sölling

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said later, he used "to stop Oppenheim's mouth". By the end of 1856 Krupp had reduced his debit with Oppenheim to around 17,680 thalers. The connection was not wholly broken off because Krupp did not want to offend the Cologne-Minden Railway, but the link with Oppenheim was limited to cashing bills of the Cologne-Minden Railway. Oppenheim was an object of Krupp's particular hatred. By 1874 Carl Meyer said that the firm Krupp had no connection whatsoever with Oppenheim.[2]

When the Disconto-Gesellschafrt was founded in 1851, Krupp acquired some shares; but it was only somewhat later that he began to borrow from the Disconto-Gesellschaft.[3] The Disconto-Gesellschaft was no more enthusiastic about Krupp than the House of Oppenheim was. Hermann Weise, the Procurist of the Disconto-Gesellschaft made the following explanation to Ernst Waldthausen, a silent partner of Krupp, in 1856 about why the Disconto-Gesellschaft did not like lending to Krupp:

> "With us the largest sum is - as you know - 60,000 thalers; that Krupp can use this and would like to have it, I am inwardly convinced; the question is whether it is reasonable and justified to entrust him with this amount - or any money at all. No matter how much I admire Krupp as an ingenious industrialist, until now I have had very little cause to admire the way he handles money."

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2. "Die Finanzlage der Firma Fried. Krupp von 1844-1863. Geschichtliche Studie. Als Handschrift gedruckt. Geheim: Nicht zur Ausgabe bestimmt" (Essen, March 1908) pp. 18-19, 30-31, 47, 54; in: H.A. Krupp WA X a. 3. 80; Abklatsch of Carl Meyer, Berlin, 6 April 1874 to F. W. Gehra in Breslau, H.A. Krupp, WA II 13. (Kopierbuch) fols. 20-21.

3. "Finanzlage Krupps 1844-1863" p. 19. in: H.A. Krupp WA X 3. 80.

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Waldthausen added:

> "There you have not only the opinion of the Disconto-Gesellschaft, but of all the rest of the financial world which has had dealings with the Firma Krupp!"[4]

In the 1850's Krupp also initiated links to a number of other banks: to the Schaaffhausen'scher Bankverein of Cologne from 1853, and to the Berlin private banks Mendelssohn & Co., Robert Warschauer & Co. and S. Bleichröder during the course of the decade; Krupp began working with the private bank Wilhelm & Conrad Waldthausen of Essen in 1856.[5] Sölling had a keen merchant's nose for the course of the conjuncture, and in 1856 he became very concerned about how much Krupp had borrowed from the various bankers. On 10 October he wrote to Alfred Krupp:

> "If we did not have the high overdrafts at the bankers, Schaaffhausen 113,000, Herstatt 70,000, Disconto-Ges. 30 to 40,000, I would not be so concerned about the matter; but so long as these accounts are not brought down altogether to a reasonable amount of about 60-100,000, I shall remain very worried, and I believe rightly so."[6]

On 27 October 1856 Sölling repeated his warning:

> "You can count on the fact that in the new year a warning à la Oppenheim will come [from Herstatt], and then we will not have any 65,000 thalers drawn on the Cologne-Minden Railway with which to stop

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4. Ernst Waldthausen 25 September 1856 to the Krupp Procurist Theodor Topp in: "Finanzlage Krupps 1844-1863" pp. 56-57 in H.A. Krupp WA Xa 3.80.

5. "Finanzlage Krupps 1844-1863 pp. 18-19 in: H.A. Krupp WA Xa 3. 80.

6. Friedrich Heinrich Sölling 10 October 1856 to Alfred Krupp in "Finanzlage Krupps 1844-1863" p. 53 in: H.A. Krupp WA Xa 3. 80.

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his mouth."[7]

It is interesting to contrast the situation of Krupp with that of the Phoenix. By straining every sinew, Krupp never seems to have been able to borrow much more than 300,000 thalers from various bankers, if we total the amounts in Sölling's letter of 10 October and add another 100,000 for Oppenheim. The Phoenix, on the other hand, was able to borrow no less than 680,000 thalers on current account from its bankers, Sal. Oppenheim jr. + Cie. and Edward Blount & Co. of Paris in 1855.[8] And the Phoenix was a much more mediocre enterprise than the already famous firm of Krupp. It had already undergone one reorganization in 1855, and five years later it would need the sharp knife of David Hansemann to recover. Yet the Phoenix was largely a creation of financiers and private bankers; evidently Oppenheim, for one, felt he could trust his like more safely than a brilliant but unpredictable character like Alfred Krupp. This turned out to be a serious error of judgement.

Another instance of the distrust the banks had for Krupp came in 1859, after the death of Friedrich Sölling: Sölling's silent partnership was offered to both the Schaaffhausen'scher Bankverein and J. D. Herstatt. Both refused it.[9]

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7. Sölling, 27 October 1856 to Krupp in "Finanzlage Krupps 1844-1863" p. 54 in: H.A. Krupp WA Xa 3. 80.

8. Rondo E. Cameron, France and the Economic Development of Europe 1800-1914. Conquests of Peace and Seeds of War (Princeton, 1961) p. 393.

9. "Finanzlage Krupps 1844-1863" p. 59 in: H. A. Krupp, W.A. Xa. 3. 80.

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The turning point for Krupp's financial saga came in 1858, when Wilhelm Ludwig Deichmann opened his own private bank in Cologne. Deichmann had been one of the partners of the Cologne private bank Abraham Schaaffhausen & Co. at the time of its collapse in 1848, and atoned for this by working to rebuild the bank in the form of the Schaaffhausen'scher Bankverein. (The collapse of Schaaffhausen in 1848 was due to illiquidity because of the unusual events of that year; Schaaffhausen had more than enough assets to cover its liabilities, the assets just happened to be in loans to the iron industry and in Cologne property, which were very illiquid.) By 1858 the bank had recovered enough so that it could repay the government the funds extended to it, and Deichmann left the bank to set up his own firm. Deichmann had numerous family connections among the "Cologne clique" (Kölner Klüngel) which he could tap, and one of the most prominent members of the Kölner Klüngel, Adolph vom Rath, a member of the wealthy Cologne family of sugar refiners, became a partner in Deichmann & Co.[10]

Krupp at once opened an account, and in the first year of existence of the new bank (1858), the turnover in his account totalled 150,000 thalers. Krupp had at last found a private banker who believed in him. Deichmann gave evidence of this in a letter of 11 May 1859, when he extended Krupp a further credit of 60,000 thalers, and added no less welcome words of praise for Krupp:

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10. Gert von Eynern, Die Unternehmungen der Familie vom Rath. Ein Beitrag zur Familiengeschichte (Bonn, 1930) p. 157.

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> "You are in a far more fortunate position than most of the other large establishments, since you do not need the help of the bankers, upon whom one can rarely count in evil times."[11]

No less astonishing than the willingness with which Deichmann extended this credit is the timing: the outbreak of the Italian brought about a panic on the London Stock Exchange in 1859, which began in the third week of April and continued into the beginning of May.[12] Deichmann was anything but a fair weather friend. It does seem as though Deichmann may have later been more cautious, or Krupp's demands outstripped Deichmann's resources, for in 1865 Krupp turned to the French banker Baron F. A. Seillière for further loans.[13] But when Krupp began further massive expansion in 1871, Deichmann extended a credit in unlimited amount, and added, "The larger the sums you draw upon us, the more we like it."[14]

Krupp continued to spread his business among numerous banks. This was partly deliberate policy, and partly because Krupp was so pugnacious that he often quarreled with his bankers. In 1874 Carl Meyer remarked that Krupp had an active connection to Mendelssohn & Co. and Robert Warschauer

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11. "Finanzlage Krupps 1844-1863" pp. 18-19, 59-60 in: H.A. Krupp WA Xa 3. 80.

12. David Morier Evans, The History of the Commercial Crisis 1857-58, and the Stock Exchange Panic of 1859 (London, 1860) pp. 148-170.

13. Cameron, France and Economic Development, pp. 396-397; Wilhelm Berdrow, Alfred Krupp (Berlin, 1927) vol. 2 p. 89.

14. Krüger, Kölner Bankiergewerbe, p. 109.

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& Co.[15]

One of the most important banking connections of Krupp was with the exclusive Berlin banking house of Meyer-Cohn, favoured by Emperor William I and scions of the Prussian aristocracy, including the Hohenlohe family and Friedrich von Holstein. The connection to Meyer-Cohn seems to have been on an easier footing than those with Mendelssohn, Warschauer, and Bleichröder, partly because Meyer-Cohn, as a newer and less traditional banking house - and with a clientele whose finances were often in a far more confused state than Krupp's - was more tolerant of Krupp's irregular financial habits. Alfred Krupp brought this out in a letter to the Prokura around October 1876:

> "If the business in Petersburg is realized, then the question of how to receive the payment arises. Previously the money went via Mendelssohn, now we will probably recommend another house, not Bleichröder or Warschauer, because they would prove themselves to be no better. The bird is not yet on the roof, to say nothing of it in the hand, but one must still prepare oneself for this question. Perhaps the Russians have another house for their business, otherwise I will propose Meyer-Cohn, as soon as there is something to propose."[16]

Krupp also came into contact with other banks who were

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15. Carl Meyer, Berlin, 6 April 1874 to F. W. Gehra in Breslau in: H. A. Krupp, WA II 13, fols. 20-21.; Werner E. Mosse, Jews in the German Economy: The German-Jewish Economic élite 1820-1935 (Oxford, 1987) p. 276.

16. Alfred Krupp, probably October 1876 to the Procura, in: Alfred Krupps Briefe und Niederschriften vol. 15: Das Jahr 1876 fol. 278 in: H.A. Krupp On Meyer-Cohn see: Helmuth Rogge, Friedrich von Holstein. Lebensbekenntnis in Briefen an eine Frau (Berlin, 1932) p. XXIX; Bundesarchiv Koblenz, Nachlass Chlodwig Hohenlohe, Nr. 385 and Nr. 981; Fritz Stern, Gold and Iron: Bismarck, Bleichröder and the Building of the German Empire (New York, 1977) p. 251; Mosse, Jews in German Economy pp. 99, 101, 173, 176.

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agents for foreign governments. Thus Krupp supplied the Roumanians with cannon; and their agent in Berlin was the Disconto-Gesellschaft.[17] Finally, Krupp was always willing to spread his nets wider in the hope of raising more loans: thus in March 1873 Krupp began negotiations with the Preussische Central-Bodencredit-Actien-Gesellschaft of Berlin for a five year loan of 10 million thalers, at an interest rate of 5% plus a fee of 2%, secured by a mortgage against all of Krupp's land. This was a very out-of-character financial transaction for the Preussische Central-Bodencredit-AG, since it was established as a mortgage bank, designed to raise money for East Elbian agrarians through issuing Pfandbriefe. The proposed loan, however, did not come to fruition.[18]

Krupp's financial situation was never disastrous; the firm was too good an establishment for that to be the case. But until Krupp opened his account with Deichmann in 1858, Krupp had constant quarrels with his bankers and money was always very tight. It is certainly true that Krupp did not know how to manage his financial affairs correctly; he proceeded along merrily until a crisis arose. But the bankers were demanding too much in requiring that Krupp be a financial mastermind, as well as an industrialist of genius. Banks should be the handmaiden, not the mistress of industry; and they should worry about the financial affairs

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17. M. Müller, Vienna, 29 November 1881 to Friedrich A. Krupp in Essen in H.A. Krupp, W.A. IV 238,fol. 16.

18. Extract from file W.A. IV 114 in: H. A. Krupp, W. A. IV h 147, fol. 4.

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of their clients, leaving their clients to produce the product and market it. The history of Krupp's relations with his bankers is one of the blackest marks against the German banks. Oppenheim appears in a very unflattering light; and the two universal banks involved, the Disconto-Gesellschaft and the Schaaffhausen'scher Bankverein, appear no better. Krupp's salvation was the extensive and diverse network of private bankers which Germany had in the 1850's, substantial parts of which had disappeared by 1914. Thus Krupp could continue knocking on numerous doors, until he found a Deichmann and a Meyer-Cohn who would put up the funds he needed.

B. The Krupp Loan of 1874

During the boom years of the early 1870's, Krupp went on a shopping spree. It was during these years that Krupp made his first big move upstream, acquiring numerous iron mines and collieries. Money was devoted to other purposes as well: Krupp built a workers' colony at Cronenberg. This huge increase in spending combined with the sudden collapse of the iron market in 1873 caused Krupp to rack up vast losses in 1874.[19] As we have seen, Krupp sought one new source of capital through raising a mortgage from the Preussische Central-Bodencredit-AG in March 1873; but this plan fell through. Carl Meyer sounded out the Disconto-Gesellschaft, and Adolph von Hansemann proposed a loan at 5% plus 2% of any profits of the factory. "Death would be

19. Alfred Krupps Briefe und Niederschriften vol. 20: 1884-1887 fol. 280 note 2 in: H. A. Krupp.

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preferable", was Alfred Krupp's reply.[20] Finally Krupp returned to one of his favourite ideas, which he had already suggested to Bismarck in 1866: since Krupp's plant was so important to the security of Prussia, the Prussian government should supply him with more capital. In a letter to the Procura (unlike much smaller companies which had directors, Alfred Krupp was such an autocrat that he only tolerated a board of Procurists - the Procura - below him) of 17 January 1874, Krupp began with suspicions of Deichmann's intentions and then outlined his plans to pump the state for money:

> "From indications I beforehand inferred what is now happening. -
> "Deichmann wants his bills to be covered and it almost appears as if Deichmann in future wants to guide the rudder . . . .
> "Finally I will tell you what I have in mind. I will come back to the entire 10 millions from the State, and I will tell Bismarck that I must keep them for 10 years. If the State cannot agree to that, I will say to him that my decision is then firm - since I do not want to have anything to do with bank usury - that the factory is to pass into other hands as soon as the contracts for Prussia and Germany are assured of fulfillment.
> "I will further demand that the State take an interest in the existence of the factory through an investment of capital, because I do not want to see an enemy destroy the factory on my sole account. I only want to retain the factory in the event of a new war if the State has guaranteed to participate in any loss."[21]

Krupp did persuade the Prussian government to concern itself with bailing him out, but the loan did not come from

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20. Alfred Krupp, Essen, 18 July 1879 to the Firma in Essen in: Alfred Krupps Briefe und Niederschriften vol. 18: 1879-1980 fol. 120 in: H. A. Krupp.

21. Alfred Krupp, probably 17 January 1874 to the Procura, transcription from W. A. IV 114 p. 129 in: H. A. Krupp W. A. IV h 147.

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the Prussian government directly, but rather from the Seehandlung. The Seehandlung was a very peculiar Prussian financial institution. It ws originally founded by Frederick the Great in 1772 as a company to trade in the South Seas. It soon lost this purpose, however, and under the Finance Minister Rother in the early nineteenth century it became a holding company for Prussian state enterprises. After the end of the Rother era in 1848, Prussia operated with two state banks: The Bank of Prussia was merely a note-issuing bank, but the Seehandlung acted as a development bank like the Industrial Bank of Japan or the Development Bank of Singapore. In this period it was extremely common for the Seehandlung to underwrite new issues of private companies, usually in association with the Disconto-Gesellschaft, even where no state interest can be discerned: in 1873 it underwrote shares of the Gelsenkirchener Bergwerks-AG and bonds of the Dortmunder Union.[22] Prussia accordingly met Krupp's demand by having the Seehandlung undertake the lead in underwriting a 10 million thaler loan for Krupp; and this was enough to make the other major banks fall into line and come up with the money.

One of the most curious participants in the

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22. "Bestandsinformation für den Wirtschaftschistoriker aus dem Deutschen Zentralarchiv Potsdam: Der Bestand Preussische Staatsbank (Seehandlung) im Deutschen Zentralarchiv Historische Abteiling II, Merseburg" in: Jahrbuch für Wirtschaftsgeschichte (Berlin, 1970) III p. 261; Otto Glagau, Der Börsen- und Gründungs-Schwindel in Deutschland. (Zweiter Theil von "Der Börsen- und Gründungs-Schwindel in Berlin) (Leipzig, 1877) pp. 347-349.

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underwriting was the Disconto-Gesellschaft, which, with 14% of the loan, would have a participation second only to the Seehandlung itself. Yet at the same time that the Disconto-Gesellschaft was supplying these funds to Krupp, the Dortmunder Union also needed funds and the Disconto-Gesellschaft soon had to swallow a new issue of Union preference shares. In the case of Rothschild, Carl Meyer noted that he worked against the Krupp loan because he had a heavy position in Union preference shares.[23] The Disconto-Gesellschaft never seems to have displayed a similar enmity. I would suggest two reasons for this. First of all, even in a time of crisis Krupp was still the premier name in German industry, and banks were falling over each other to get a share of the loan: thus Julius Schwabach, the partner of S. Bleichröder, demanded and obtained for his house a place in the smaller and more prestigious consortium committee instead of the larger confidential commission (Vertrauenscommission).[24] The Breslauer Disconto-Bank complained to Carl Meyer about being left out of the consortium and requested a sub-participation instead.[25] If the Disconto-Gesellschaft did not want this attractive

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23. Carl Meyer, Berlin, 3 November 1874 to Sophus Goose in Essen H.A. Krupp W.A. IV 1439 fol. 24.

24. Emil Russell, Berlin, 4 April 1874 to Carl von Bitter in Berlin, in: "Acta betreffend die Ausgabe und Uebernahme von 10 Millionen Thlr. 5% Anleihe der Firma Friedrich Krupp Gussstahl Fabrik zu Essen. Consortial-Geschäft 1874-1876 vol. I" in: Geheimes Staatsarchiv Preussischer Kulturbesitz, Rep. 109, Nr. 5022, fol. 4.

25. Carl Meyer, Berlin, 6 April 1874 to F. W. Gehra in Breslau in: H. A. Krupp, W.A. II 13, fols. 20-21.

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business, other banks were more than willing to leap in. Secondly, and in my opinion the more important reason, the Disconto-Gesellschaft had to retain the good will of the Seehandlung, which was always the lead underwriter for Prussian and German government bonds. The president of the Seehandlung, Carl von Bitter, was favourably disposed towards Krupp, and whatever the private preferences of the Disconto-Gesellschaft, the Disconto-Gesellschaft could not afford to offend the Seehandlung. Rothschild was located in Frankfurt, did not work in close proximity to the Seehandlung, and did not depend on Prussian and German government business for his bread and butter; he could afford the luxury of declaring his enmity to the Krupp loan. The Disconto-Gesellschaft could not.

Carl Meyer summed up the relations between Krupp and the bankers over the 1874 loan very well in a letter ot Ernst Eichhoff (Krupp's brother-in-law) of March 1874:[26]

> "You believe that money must now be cheaper than in the previous year! - This belief does not correspond to the actual circumstances. There is no turnover in the best securities. To name an example, the 5% tax-free preference shares of the Austro-French Staatsbahn, payable in gold, are quoted at 92%, and were issued the previous year above par! - A great number of industrial establishments have issued senior bond issues (Prioritätsanleihen), e.g. the Dortmunder Union six millions at 6%, in spite of this high interest rate the Disconto-Gesellschaft has not been able to place this loan; the Disconto-Gesellschaft has it in its own box!
> "Bleichröder is not mighty enough to issue such a loan! Even Deichmann's are of the opinion that only the group Central Boden-Credit/Disconto-Ges./Rothschild can conclude such a loan! In

26. Gert von Klass, Die Drei Ringe. Lebensgeschichte eines Industrieunternehmens (Tübingen, 1953) pp. 118-120.

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addition I would ten times prefer to deal with Hansemann than with Bleichröder, since the arrogance, yes the impudence (Frechheit) of Bleichröder's partner Schwabach is unbearable! I already had more than enough when I dealt with him last summer about increasing the Bank credit! - "I had written this much, when Meyer-Cohn visited me (at ten in the morning) to give me the following important and bitter information! - "Yesterday evening he was at a social gathering, where there was also an important member of the directorate of the Bank of Prussia! The conversation came to Meyer-Cohn's business connection to you and the gentleman in question said the following! 'I advise you seriously not to engage yourself further with Herr Krupp, the possibility can certainly not be excluded that Krupp will soon get into serious difficulties, and even if they finally reach a favourable settlement, you will still have serious obligations to fulfil! Herr Krupp has the mania of wanting to buy everything. The Cologne bankers have become very cautious and want to go no further!' - So you see that your difficulties are known! "After Prince Bismarck roundly declared to me that he never can nor will approve a loan, that he can only help in the form of advances - it is lost effort to approach him yet again! - We cannot receive further advances, since everything which has been ordered from us has been paid for - besides they do not provide any lasting benefit. "Relata refero! But it seems to me, since I stand somewhat distant from matters, that there is no time to lose in order to avoid a catastrophe."

The following day Meyer emphasized once again the urgency of the matter in a letter to Eichhoff:[27]

> "The Herr Chef could perhaps learn within twenty-four hours from Prince Bismarck that it is impossible to be satisfied from state funds! I hope I shall succeed in keeping him from any such attempt, since it could harm more than it helped."

Meyer seems to have been successful in finally convincing the firm in Essen of the urgency of the matter, because by 25 March 1874 Emil Russell of the Disconto-Gesellschaft could report to Bitter that the terms of the

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27. Klass, Drei Ringe p. 120.

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loan were agreed in all essentials between the bankers and Krupp.[28] The actual contract was signed in Berlin on 7 April 1874. The proportions of the various members of the consortium were:[29]

1. Königliche General-Direction der Seehandlungs-Societät..... 47%
2. Direction der Disconto-Gesellschaft, Berlin.... 14%
3. Bank für Handel und Industrie, Berlin..... 5%
4. Berliner Handels-Gesellschaft, Berlin..... 7%
5. Bankhaus S. Bleichröder, Berlin..... 7%
6. A. Schaaffhausen'scher Bankverein, Cologne..... 5%
7. Bankhaus Sal. Oppenheim jr. + Cie., Cologne.... 5%
8. Deichmann & Cie., Cologne..... 10%

Writing to Friedrich Wilhelm Gehra of the Breslauer Disconto-Bank, Carl Meyer emphasized that the firm Krupp had had no influence whatsoever on the formation of the consortium. It was particularly odd that the Bank für Handel und Industrie, the Berliner Handels-Gesellschaft, and Oppenheim were included, since they did not figure then among Krupp's bankers, but Warschauer and Mendelssohn, with whom the Firm had an active relationship were left out. In particular, we can imagine how Krupp must have gritted his teeth at the thought of having to work with his old enemy Oppenheim again. Krupp did not even like working with Oppenheim when it was to his own advantage, such as using Oppenheim's influence with Emperor William I (Oppenheim was on friendly terms with the Emperor, and even more so with the Empress Augusta, since their period in Koblenz) to get the Emperor's support for iron tariffs. Krupp liked even

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28. Emil Russell, Berlin, 25 March 1874 to Bitter in Berlin in: GStA PK Rep. 109 Nr. 5022 fol. 1.

29. Contract between Krupp and the loan consortium, Berlin, 7 April 1874 in: GStA PK Rep. 109 Nr. 5022 fols. 67-68.

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less having the loan that was to save his firm being subscribed to this hostile party. But Krupp had no choice in the matter. Oppenheim was a close ally of the Disconto-Gesellschaft, and the Disconto-Gesellschaft could lay down the law.[30]

The bond issue was for 10 million thalers, paying interest at 5% and repayable at 110% over the years 1876 to 1883, with the bonds to be amortized chosen annually by lot. This loan is generally regarded as the first example of the issue of Partialobligationen (tradeable bonds of uniform amounts) in Germany, although as I remarked above (see above, pp. 173-175) there are some indications that the Anhalt bond issue of 1859 was the first issue of this type. This loan had to be repaid very rapidly, and so to get Krupp over the trough of the 1870's a similar loan was issued later in the decade.[31]

In addition to underwriting the two Krupp loans, the Seehandlung made numerous Lombard loans to Krupp during the 1870's - loans against collateral which is usually, as in this case, publicly quoted securities. The Seehandlung even made Lombard loans to Krupp against the security of the Krupp bonds themselves on several occasions.[32]

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30. Carl Meyer, Berlin, 6 April 1874 to Friedrich Wilhelm Gehra in Breslau in: H. A. Krupp, WA II 13 fols. 20-21.

31. Ibid; further details in Saling's Börsen-Papiere.

32. L. Wiegand and Carl Meyer, Essen, 30 August 1875 to the Seehandlung in Berlin, and Sophus Goose, Essen, 23 February, 1879 to the Seehandlung in Berlin in: "Acta Betr. die dem Herrn Fried. Krupp in Essen gewährten Lombard-Darlehen", GStA PK, Rep. 109, Nr. 5020, fols. 1 and 21.

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The eminent names of the borrower and the underwriters alike assured as good a reception as could be expected for a security issued during the depths of a financial crisis. In underwriting this loan, the Seehandlung had the further advantage that it could command the resources of the entire government apparatus. Thus on Saturday, 2 May 1874, the Neue Börsen-Zeitung of Berlin (a paper which Glagau says chivalrously took the side of the public against the stockjobbers; hence probably an anti-Semitic muckraking paper) doubted whether the Seehandlung had obtained a first mortgage on the Krupp properties - as in fact it had. This called forth a letter from the Berlin Police President von Madai, asking whether the Seehandlung wished to pursue a libel action against the Neue Börsen-Zeiting. The answer was yes.[33]

Yet the crisis continued to deepen, and we hear of panic reactions, such as reported in Carl Meyer's letter to Sophus Goose of 16 November 1875:

> "Signatura temporis - even Krupp is broke (pleite)!! - Meyer-Cohn was just here! on Saturday a gentleman from the higher nobility sold 5000 thalers Krupp; on Monday a relative of his also sold a couple of thousand thalers! Meyer-Cohn is struck by this, and since he knows the gentlemen more closely, he asks the reason why! He is then told that they had been to a social gathering on Friday; some members of the Reichstag were also present! The talk comes to the desperate situation of industry! A m.o. parliament [English in original] thereupon says that the great

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33. von Madai, Königliches Polizei-Praesidium, Berlin, 5 May 1874 to Bitter, President of the Seehandlung, Berlin, GStA PK, Rep. 109, Nr. 5022 fol. 139 and Bitter's minute at bottom of same; Otto Glagau, Der Börsen- und Gründungs-Schwindel in Berlin. Gesammelte und stark vermehrte Artikel der "Gartenlaube" (Leipzig, 1876) pp. 81-82.

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> industrialist Krupp is irretrievably lost! The government will not and cannot help, his collapse is inevitable! The information comes from government circles! -"

Meyer himself had a better grasp of current business affairs, and dismissed this idea as a "fairy tale" (Mährchen).[34] And Meyer wished he could profit at the expense of the panic of others; writing to Goose two days later he remarked.[35]

> "What do you say to the price of the Krupp bonds: 97%. If only we had the money to buy some!"

It would be interesting to know who the gentlemen from the higher nobility were who panicked and sold their Krupp bonds. A possibility is two members of the Hohenlohe family, the Dukes of Ratibor and Ujest. This is because we know they were clients of Meyer-Cohn;[36] they fit the picture of two related speculators from the higher nobility; the trading on inside information fits their raffish characters; and they moved in government and political circles and can easily be imagined at such a social evening. But unless confirming evidence comes to light, we cannot know for sure.

One of the conditions of the Seehandlung in underwriting the loan was the installation of Carl Meyer as financial comptroller. The firm also established an

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34. Carl Meyer, Berlin, 16 November 1875 to Sophus Goose in Essen in H. A. Krupp WA IV 1439 fol. 72.

35. Carl Meyer, Berlin, 18 November 1875 to Sophus Goose in Essen, H.A. Krupp. WA IV 1439, fol. 75.

36. Bundesarchiv Koblenz, Nachlass Chlodwig Hohenlohe, Nr. 385 and Nr. 981.

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accounting department (Rechnungsrevisionsbureau) which at last drew up some reliable accounts of the firm's financial activities.[37] An interesting aspect was the condition of the loan that Krupp supply regular quarterly reports on the firm's financial situation and the amount of orders and raw materials the factory had to hand. These reports were invariably accompanied by a covering letter written by Carl Meyer, which sought to put matters in the best light possible, such as this letter of 16 December 1874:[38]

> "In the railway branch, namely in rails, such colossal orders at profitable prices have come in, that in spite of a capacity which has expanded yet again the establishment is amply supplied with orders for the whole year 1875!"

These reports were then read by the Seehandlung, the Disconto-Gesellschaft, and the Berliner Handels-Gesellschaft. Thus the Disconto-Gesellschaft was in the possession of extremely full information about the financial situation of one of the Dortmunder Union's chief competitors. I shall discuss this conflict of interests in further detail in the next section.

To conclude the remarks about Krupp's 1874 loan, Krupp was in an extremely weak position vis-à-vis the bankers in 1874; it is a trough in the history of the firm. But weak though Krupp's position was, and although it had to make important concessions (such as giving the bankers regular

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37. Carl Meyer appointed Krupp financial controller: Klass, Drei Ringe p. 121; Notiz von Nidas: "Die Entstehung des Krupp'schen Rechnungsrevisionsbureaus und Nusser, sein erster Leiter" in: H.A. Krupp, WA VII f. 834.

38. Carl Meyer, Essen, 16 December 1874 to the Seehandlung in Berlin GStA PK Rep. 109, Nr. 5022 fol. 231.

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insights into its financial situation), in the end Krupp still came up trumps for two reasons: first of all, as Germany's premier industrial concern Krupp was too valuable a client for the banks to reject it totally; and equally important, Krupp had a very powerful ally in the form of the government and the Seehandlung, which permitted it to issue a loan at a time when other companies had no such good fortune.

C. Krupp's Relations with the Dortmunder Union.

In the 1870's, the Disconto-Gesellschaft was lending vast sums to two competing firms: Krupp and the Dortmunder Union. I now propose to examine how the Disconto-Gesellschaft coped with this conflict of interests. I will first examine to what extent Krupp and the Dortmunder Union really were competing enterprises; I shall then discuss the specific instance of competition for the Russian railway market; and I shall finally treat the industrial organization which provided a forum for the management of this conflict, namely the rail cartel.

One might at first think that there was no conflict of interests because Krupp and the Dortmunder Union were not truly competing enterprises: Krupp made guns and specialty steels, the Union made some steel but was above all a mass producer of lower grades of iron, especially rails. Although there is some truth in this distinction between the upmarket Krupp and the downmarket Union, both companies had such a broad palette of products that they competed in numerous sectors. Krupp was very dependent on the railway

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market: Krupp's emblem, the three rings, symbolizes not guns but seamless steel railway tyres.[39] Krupp enjoyed converting business competition into personal enmities, and I have already referred to Krupp's dislike of "a certain Mr F. Grillo, who is much engaged in enterprises, who is very clever and cunning and from whom I kept hitherto away."[40] In 1872, when the Union was being founded, Grillo hired away a Krupp foreman, Osann, and Krupp reacted as if he had been stung. Momentarily distracted from the fleshpots of Torquay, Krupp dashed off a long fulmination to his brother-in-law Ernst Eichhoff:[41]

> "The State also has an indispensable need for prisons, penitentiaries and prison officials, which cost money. We also must not be afraid of spending money for similar purposes and should now make a start. No one must leave with impunity. The military shoots deserters, we cannot do that, but we can make them suffer as a warning for others if we exploit our legal rights..."

In November 1872, discussing the purchase of iron ore mines in Spain, Krupp said he did not want to have to share the mines with a continental competitor such as the Société Anonyme des Etablissements John Cockerill, but was willing to do so if that was the only way he could prevent a German

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39. Klass, Drei Ringe, pp. 48-49.

40. Alfred Krupp, Essen, 4 August 1875 (in English) to Longsdon in London, Alfred Krupps Briefe und Niederschriften vol. 14: 1875 fol. 323 in: H.A. Krupp.

41. Alfred Krupp, Torquay, 22 February 1872 to Ernest Eichhoff, Alfred Krupps Briefe und Niederschriften vol. 11: 1872 fols. 95-96 in: H. A. Krupp.

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competitor, such as the Union, from moving into Spain.[42] Finally, in 1874, when the Union began the manufacture of guns, Krupp immediately warned his managers to be on their guard against "intrigues of big ring-leaders from that side" who would presumably try to woo away Krupp technicians.[43] In addition, on 3 November 1874 Carl Meyer warned Sophus Goose not to give the representation of Krupp in Munich to the same agent as the Union, lest Adolph von Hansemann and Emil Russell learn too much about Krupp's business.[44]

With the collapse after 1873 this competition increased, and it was fiercest in the Russian railway market. The 1873 collapse marked a secular change as Germany and most of the other advanced industrial nations completed their main and secondary railway lines. After 1873, there was only one market in Europe which was underdeveloped enough still to require railways yet developed enough to pay for them: the Russian Empire. Here the railways were being built by idiosyncratic Jewish railway kings.[45] Foremost among them was Samuel Poliakoff, who built two parallel lines in the southeast of Russia and

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42. Alfred Krupp, Villa Hügel, 8 November 1872 to Lorsbach, Alfred Krupps Briefe und Niederschriften vol. 11: Das Jahr 1872 fol. 272.

43. Alfred Krupp, Essen, no date [1874] to Sophus Goose? in: Alfred Krupps Briefe und Niederschriften vol. 13: Das Jahr 1874 fol. 2 in: H. A. Krupp.

44. Carl Meyer, Berlin, 3 November 1874 to Sophus Goose in Essen, H.A. Krupp, WA IV 1439, fols. 24-25.

45. Theodore H. von Laue, Sergei Witte and the Industrialization of Russia (New York and London, 1963) pp. 43-44.

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the Ukraine: Kozlov-Voronezh-Rostov, and Orel-Kursk-Kharkov-Taganrog, with a link in the south between Taganrog and Rostov.[46] Carl Meyer thought well of Poliakoff, saying that Poliakoff did not impress Meyer as a Strousberg.[47]

Krupp was soon doing a lively business with Poliakoff - to the dismay of the Dortmunder Union. On 7/19 December 1874, the Union's agents in St. Petersburg, Messieurs Becker & Grube, reported that Krupp had sold 22,000 imperial tons of steel rails at £11 5s. a ton c.i.f. Odessa or Taganrog. Payment could take place over two years at 6% per annum. Becker & Grube said that since, according to their information, Krupp had not used any Petersburg houses to provide funds for these generous credit terms, he must have obtained those funds from the Disconto-Gesellschaft in Berlin if he did not have the funds itself. That was like a red rag to the Dortmunder Union; Krupp was ruining the Russian railway market with low prices and easy credit, and he was doing it, moreover, with credit supplied by the Union's own bankers, the Disconto-Gesellschaft. Sending this letter by Becker & Grube on to Emil Russell, Wilhelm Heinrich Müller added that Krupp could be making very little indeed on these sales; freight and insurance from Essen to Taganrog via Holland would be £1. 5s., which would mean that the price of steel rails in Essen would be £10 or 67 thalers

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46. Kurt Grunwald, "Europe's Railways and Jewish Enterprise. German Jews as Pioneers of Railway Promotion" in: Leo Baeck Institute, Year Book VII (London, Jerusalem and New York) pp. 187-192.

47. Carl Meyer, Berlin, 19 February 1875 to Sophus Goose in Essen, H.A. Krupp, WA 1439 fol. 33.

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15 groschen; since Krupp had to allocate another thaler for fees and rail guarantees, at most he could be making 66 thalers 15 groschen (199.50 marks) on 1016 kilos of steel rails (or 196.36 marks per metric tonne). Adolph von Hansemann immediately forwarded this correspondence to Bitter, adding that the two years credit extended to Poliakoff was extremely superfluous since the shares and bonds of his railway bore an unlimited guarantee of the Russian government, and the government promptly paid Poliakoff as soon as he completed a section.[48]

The essence of the complaint of Becker & Grube, the Dortmunder Union, and the Disconto-Gesellschaft was this: Krupp was stealing orders away from his competitors through dumping, predative pricing and cheap credit. Krupp could only extend this cheap credit because of the funds provided by his loan. It was the duty of the Seehandlung to put an end to this unbearable situation by bringing pressure to bear upon Krupp.

Yet this pressure never seems to have materialized on this occasion. The correspondence ends with Hansemann's letter. Apparently the Seehandldung felt Krupp's actions were part of perfectly normal competition, and had no desire to do the Dortmunder Union's dirty work. The correspondence was simply placed ad acta, it was filed and forgotten.

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48. Becker & Grube, Petersburg, 7/19 December 1874 to the Direction of the Union, Actien-Gesellschaft für Bergbau, Eisen- und Stahl-Industrie zu Dortmund; Director Wilhelm Heinrich Müller, Dortmund, 23 December 1874 to Emil Russell; Adolph von Hansemann, Berlin, 24 December 1874 to Bitter; in: GStA PK Rep. 109, Nr. 5022 fols. 235-237.

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The Disconto-Gesellschaft does seem to have tried to prevent Krupp from cutting prices, urging Krupp to take into account its debt burden as a cost of production. In August 1874 Carl Meyer held talks with Hansemann, "who also let fall the contemptuous remark that with our [Krupp's] liabilities we cannot go below etc.!" Two days later,Meyer wrote to Goose, "Recent events with Hansemann + Seehandlung have taxed me severely - in spirit! The pills are too bitter for me!"[49] At times, Meyer became so demoralized that he even believed that the Union was better equipped than Krupp. He informed Goose in November 1874:[50]

> "In any case Hansemann, who knows the production of the Union, has seen that our production techniques are more complicated and expensive! He only says Bochum in order to not say Union!"

But much as the Disconto-Gesellschaft might have liked to blunt the fierce edge of Krupp's competition, in the end it did not have the power to do so, because it could exert no influence unless the Seehandlung also told Krupp to stop dumping rails in Russia; and the Seehandlung had no intention of saying anything of the kind. This is an interesting example of a conflict between banks and industry; and in this case the Disconto-Gesellschaft could not exercize any influence because Krupp had a very powerful ally in the Seehandlung.

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49. Carl Meyer, Berlin, 28 August 1874 to L. Wiegand and Sophus Goose in Essen, H. A. Krupp, WA IV 1439, fol. 5; Carl Meyer, Berlin, 30 August 1874 to Sophus Goose in Essen, H.A. Krupp, WA IV 1439, fol. 7.

50. Carl Meyer, Berlin, 3 November 1974 to Sophus Goose in Essen in: H.A. Krupp, WA IV, 1439 fol. 25.

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So the Disconto-Gesellschaft changed tack; if it could not force Krupp to stop dumping in the Russian market, perhaps it could reach an agreement instead. In March 1876 Russell and Hansemann discussed with Meyer the possibility of an agreement to divide up the Russian market. They explained that they were willing to let the Union run up losses so long as it continued to produce flat out (see above, pp. 255-256). The idea behind this was clear: sooner or later one of the competitors would collapse, and the Union could then mop up the market. As Meyer reported it: [51]

> "Both [Hansemann and Russell] believe the other competition will soon pack it in, Baare especially; an 'influential party' has indicated that one will not and cannot sit quietly and watch a further price reduction! Bochum is in deep with its bankers!
> "So the question was then ventilated if we, Krupp-Union – would not want to reach an agreement in Russia for large objects! There is so much demand there that we will not lack for work and we will soon be the only (i.e. solvent) German works which will still compete in Russia. Then it would be a foolishness if the prices were ruined only by us! That is worth hearing out; I will write to Wachter about it, the DG will do the same to its Petersburg representative!
> "The latest Bochum prices, however, (£9 2s. = 160 M. loco Bochum) indicate that one still cannot believe the 'influence'."

It would be interesting to know whence the Disconto-Gesellschaft heard that the Bochumer Verein was on the ropes: probably Oppenheim, who would be well placed to know all that happened in the Schaaffhausen'scher Bankverein, or perhaps from the Schaaffhausen'scher Bankverein itself. There are no further indications, however, that the

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51. Carl Meyer, Berlin, 13 March 1876 to Sophus Goose in Essen, in: H. A. Krupp WA IV 1439 fols. 150-152.

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Dortmunder Union and Krupp actually reached an agreement to divide up the Russian railway market. Krupp and the Union did reach an agreement, however, when they joined the German rail cartel.

The rail cartel was originally founded in 1858. It was a reaction to the crisis following the panic of 1857 and thus analogous in its formation to the first pressure group in coalmining, the Verein für die Bergbaulichen Interessen, also founded in 1858. The director of the rail cartel, which bore the formal name of the "Vereinigte Rheinisch-Westfälische Schienenwerke", was Nicolaus Druckenmüller, who left Neuschottland in 1864 to devote himself fully to the rail cartel. The rail cartel was the longest lasting and most successful of all German cartels, for three special reasons. First of all, rails were sold with guarantees by the rail manufacturer, and German railways felt they could only legally enforce a guarantee if the manufacturer was also domiciled in Germany. This excluded foreign competition. Secondly, German railways (as opposed to British railways) conducted open bidding and always announced which manufacturer had won the order. Thus the cartel could monitor cheating; by contrast, it was never able successfully to extend its control to narrow-gauge mine and factory railways, which were sold through more informal methods and where it was easy to make under-the-table deals. Thirdly, the state takeover of the railways at the end of the 1870's confronted the rail manufacturers with a monopsony. The Prussian Fiskus (the section of the

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treasury which dealt with state enterprises) was notorious for its hard bargains, and the rail manufacturers felt they had to cartellize in self-defence. Even at the height of the inflation period in the 1920's some attempted to preserve the cartel to protect themselves from the government. The rail cartel formed the sound core around which the Stahlwerksverband crystallized in 1903. In fact, we can regard the Stahlwerksverband as just a continuation of the old rail cartel under a new name, since it was split into successfully cartellized "A" products, which were chiefly railway materiel, and the uncartellized (and hence booming) "B" products.[52]

I want to bring out three points here. To begin with, we must remember that the rail cartel was a very unusual cartel: it was unusual because of its success, and unusual reasons brought about this success. Another point is that the cartel was not fostered by the banks - contrary to Gerschenkron's assertion that the banks encouraged the formation of cartels to stop quarrels among their "children"[53] - but the impetus for the cartels arose from industry itself. Finally, it is important to bear in mind that all cartels (and other restraints on trade, such as

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52. Max Mengeringhausen, Die Entwicklung der Schienenfabrikation in Deutschland Doktor Ingenieur Dissertation (Munich, 1928) pp. 58, 60, 73-74, 76 (Typescript in StUB Frankfurt/Main); Gerald D. Feldman, Iron and Steel in the German Inflation 1916-1923 (Princeton, 1977) pp. 31-33, 121.

53. Alexander Gerschenkron, Economic Backwardness in Historical Perspective. A Book of Essays (Cambridge, Mass., 1962) p. 15.

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trade unions) were illegal in German until 1869 (when a new Gewerbeordnung was promulgated). Because of this we know very little about this early cartel. Hanns Jencke, a later Krupp manager, remarked that when he first joined Krupp's the firm was member of a number of railway material cartels, but their existence had to be kept secret because of public hostility.[54]

Enthusiasm among industry for the rail cartel was mixed. Alfred Krupp hated it. For him it was an

> "accursed association which incidentally is below our dignity and debases us by linking us to every unimportant institution, with scoundrels (Lumpen) and bunglers (Pfuschern)."[55]

There was more enthusiasm from Leopold Hoesch, and even more so among the younger generation of general directors such as Louis Baare and Wilhelm Heinrich Müller. The monthly meetings in Düsseldorf of the cartel were also a great social occasion for the iron industry, and permitted industrialists to meet up-and-coming managers. It was at such a conference that Leopold Hoesch offered a partnership to Wilhelm Heinrich Müller.[56]

A protocol of the rail cartel from 1874/75 has given us a glimpse of how the rail cartel worked. Essentially it operated on the principle of bid-rigging. The cartel already knew what big rail orders were imminent. The Krupp

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54. Walther Bacmeister, Emil Kirdorf. Der Mann - Sein Werk (Essen, ²1936) p. 94.

55. Hans-Carl Scheibler and Karl Wülrath, Westdeutsche Ahnentafeln (Weimar, 1939) vol. 1, p. 228 (= Publikationen der Gesellschaft für Rheinische Geschichtshunde vol. 44).

56. Scheibler, Westdeutsche Ahnentafeln, pp. 214-215.

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representative at the meeting wondered how the cartel knew, and it is possible that in this one aspect the banks may have played a crucial role, by informing the cartel of upcoming rail orders. The cartel would agree on a price, and the member who was to get the order would simply bid one thaler lower than the rest.[57]

The cartel fell apart during the boom years of the early 1870's, but as early as 13 December 1873 Druckenmüller visited Carl Meyer to ask him if Krupp would care to join a revival of the rail cartel, encompassing both iron and steelworks. Krupp did join, but a year later Meyer remarked "We appear to be the dupes in the rail cartel and will remain so . . . I wish very much that the whole story was at an end!"[58]

The cartel apparently broke up again after this. In 1876, however, the cartel was successfully revived. On 4 March 1876 Emil Russell visited Carl Meyer and they discussed plans for a new rail cartel. The impetus came this time from Louis Baare. The firm of Krupp was to preside over the cartel; the organization was to be very strict; all violations were to be severely fined. The iron cartel had thee right idea, which just recently fined Hoesch twenty thousand marks because of a violation. Meyer felt a quota of 1½ times the average was not enough for Krupp, and

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57. "Schienenvereinigung 1874/75" in: H.A. Krupp, WA IV 249.

58. Mengeringhausen, Schienenfabrikation p. 76. ; Carl Meyer, Berlin, 13 December 1873 to Sophus Goose in Essen in: H.A. Krupp, WA IV 1439, fols. 81-82. Carl Meyer, 23 December 1874, transcription from F A II B 19 1 p. 20 in: H. A. Krupp, WA IV d. 517.

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Russell agreed. Meyer and Russell also discussed how to secure the cartel against competition from iron rails; Russell said that he believed that steel rail prices were already so low that iron did not come into consideration. Another problem was how to fit eastern works such as the Marienhütte in Cainsdorf and the Vereinigte Königs- und Laurahütte in Königshütte into the cartel; Meyer thought it might be best to treat them as foreign territory. Putting the case to Goose for Krupp joining the cartel, Meyer said that if Krupp succeeded in selling 15,000-20,000 tonnes at better prices in both 1876 and 1877 it would be profit en clair and would make it easier for Krupp to compete abroad (because the profits from domestic sales could cross-subsidize discounting in foreign sales). Another important point was the prospective takeover by the Reich of the railways - which the Minister of Justice, Heinrich Friedberg, regarded as certain. If this happened (it did not, but the state takeovers of railways had a similar effect), Krupp's should join the cartel to ensure its quota of rail orders. Meyer added:

> "Herr Krupp is afraid, since we are by far the most advanced, that we may bind ourselves with less well equipped works. He was very astonished to hear that Union, Hoesch, Meiderich etc. are rather better than worse equipped than we are!"[59]

Meyer struck the Procura in Essen as too enthusiastic for the cartel, and they urged him to play hard to get. Meyer promised he would, and would conduct the negotiations

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59. Mengeringhausen, Schienenfabrikation p. 76; Carl Meyer, Berlin, 5 March 1876 to Sophus Goose in Essen, H.A. Krupp, WA IV fols. 125-127.

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with Russell in the sense "that we do not want to know anything of such an actual cartel!" But Meyer once again put his view to the Procura in favour of a cartel. Meyer began by saying that he was basically opposed to a cartel. In addition he would only conclude a cartel for $1-1^1/_2$ years, which is how much longer he expected the hard times to last. Meyer advocated a cartel because he thought Alfred Krupp and the members of the Procura, such as Goose and Minssen, were over-optimistic about Krupp's situation. First of all, he did not believe he could yet trust the firm's figures; they were better than they had been before 1874, but Meyer felt there were still important errors in the accounts. Even if he accepted Minssen's figure for the cost of producing a tonne of steel rails - 145 marks - Meyer was not yet certain if the conditions prevailed to allow that low a cost of production. Krupp was still locked into contracts to buy another 20,000 tonnes of iron ore at high prices. In addition, the cost of production might rise again if Krupp needed to secure supplies of coke which was free from phosphorous. Alfred Krupp had remarked that the Spanish iron ore would be useless if one added phosphorous contained in the coke. (This concern was actually something of a red herring: it is true that impurities in coal affect the quality of iron, but most of these impurities, most notably sulphur, burn off during coking and are not present in coke.[60]) Meyer returned to one of his favourite themes:

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60. Colin William Roberts, A Legacy from Victorian Enterprise: The Briton Ferry Ironworks and the Daughter Companies (Gloucester, 1983) pp. 43-44.

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Krupp's backwardness compared with other works:

> "You should also consider that many competing works are still better equipped than we are. Namely Meiderich, Hoesch, and even the Dtmdr Union, who can fabricate directly from their blast furnaces, an advantage, which Herr AK rates so highly, that he is holding fast to the thought of setting up a similar establishment at a later period, possibly in Spain, possibly in Duisburg!"[61]

It is interesting to note that Meyer particularly feared the newer firms such as the Rheinische Stahlwerke of Meiderich (established 1869) and the Eisen- und Stahlwerk Hoesch (established 1871) as well as the Dortmunder Union, but not older works such as Phoenix and the Hoerder Verein. Clearly what he feared was that the newer steelworks had equipment to manufacture steel in one heat, and were thus better equipped than Krupp. Meyer's fears were probably exaggerated - we already know the tribulations of the Dortmunder Union, and the Rheinische Stahlwerke suspended payment in 1877 - but it is a sign of a good businessman if one fears and anticipates one's competitors.

Meyer was able to overcome the doubts of the Procura, and the new rail cartel was formed in 1876. The quotas were divided up as follows:[62]

I. Rhenish-Westphalian Group	Shares
1. Friedr. Krupp, Essen	152,000
2. Bochumer Verein, Bochum	98,000
3. Union, Dortmund	91,857
4. Gutehoffnungshütte, Oberhausen	58,987
5. Hoerder Verein, Hoerde	58,987
6. Osnabrücker Stahlwerk, Osnabrück	58,987

61. Carl Meyer, Berlin, 8 March 1876 to Sophus Goose in Essen; Carl Meyer, Berlin, 10 March 1876 to Sophus Goose in Essen in: H.A. Krupp, WA IV 1439, fols. 132-134, 142.

62. Mengeringhausen, Schienenfabrikation p. 79.

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7.	Rheinische Stahlwerke, Ruhrort	58,987
8.	Eisen- und Stahlwerk Hoesch	57,597
9.	Phoenix, Laar	56,107
10.	Aachener Verein, Rote Erde	56,107
	Total, Rhineland-Westphalia	748,456
II.	Saar-Mosel Group	
11.	Gebrüder Stumm, Neunkirchen (3/7)	
12.	de Wendel & Cie., Hayingen (4/7)	74,538
III.	Sundry works	
13.	Ver. Königs- und Laurahütte	59,583
14.	Königin-Marienhütte, Cainsdorf	49,652
15.	Friedenshütte, Morgenroth	35,000
16.	Bochumer Stahlindustrie, Bochum	32,771
	Total, entire cartel	1,000,000

The cartel applied to Bessemer or Martin steel rails of at least 16 kilos/metre in weight. (Iron rails weigh on average 70 kilos/metre.) Steel ingots suitable for the manufacture of rails were included in the quotas and could not be delivered to cartel outsiders. Replacement rails were not part of the quotas, but could not be delivered to outsiders. Cartel members were to reduce their guarantee on rails from 10 years to 5 years. Within the Rhenish-Westphalian Group, there was a regular settling of accounts every six months in cash. The cartel applied only to Germany and Luxembourg.[63]

This cartel attracted a good deal of attention, as opposed to its predecessor, because of the debate over the introduction of pig-iron tariffs. What the opponents of the iron industry particularly objected to - Eugen Richter damned this in a speech in the Reichstag on 5 May 1879 - was the dumping of rails in export markets. These conditions prevailed during the various troughs in the iron industry, namely 1874-1878, 1883-1888, and 1892-1897. Rails were sold

63. Mengeringhausen, Schienenfabrikation, pp. 79-80.

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at 2/3 of the domestic price or even less, sometimes as low as half the domestic price.[64]

Although "dumping" is the expression which prevails in the literature, it is a concept with many flaws. Dumping assumes the sale of production below cost, in a process initiated by the manufacturer. But in many instances the market was so weak that prices did not fall because the manufacturer deliberately cut them, but the market gave way before the manufacturer. In addition, costs of production were in a state of constant fluctuation. Carl Meyer said in the passage I quoted above that he did not believe that Krupp knew the true cost of manufacturing rails. The cost of production constantly varied with the quality of the output of the coal and iron ore mines, with wages, and in reaction to numerous technical innovations, of which the most important was the Thomas process. Dumping is a flawed concept because it imagines the manufacturer having a fixed production cost and then going out to sell below cost. This is not the way it happened. Rather, Carl Meyer or Wachter in St. Petersburg would win orders for Krupp, which might be a mark or two below the cost of production, and then they would go back to the factory and technicians like Minssen would reduce production costs by another mark or two so that Krupp made a profit after all.

The unwelcome publicity which the rail cartel received made Alfred Krupp want to break it up. On 22 July 1880 he wrote to the Procura that under protective tariffs the

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64. Mengeringhausen, Schienenfabrikation, pp. 52, 60-63, 77.

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cartel was just an association of cutpurses, and he did not want to make prices like "Jewish traders (Handelsjuden) and petty pedlars." He repeated this argument in a letter to Hanns Jencke on 10 August. On 16 December 1880 he again wrote to the Procura, saying that now that Bismarck had become Minister of Trade he could be rightly indignant about the continuation of the rail cartel, because the iron industry had him to thank for the protective tariff. The state railways would buy rails overseas as a counter-measure. Bismarck must be given, through Krupp's exit from the cartel, a document of thanks and acknowledgement for the protective tariff.[65]

The Procura, however, did not act on Alfred Krupp's suggestion quickly enough and on 2 April 1881 he wrote to them:

> "So the cartel is dissolved. One can only assume that it would have been better for us in the eyes of the governments, of Bismarck, and of the railways if we had done it since now Baare will write to all the directorates and make himself the favourite child and through good will towards him fish away orders from us in front of our nose. He will enjoy the fruit which I would have liked to seen saved for us, when he says now that he would have regarded it as an injustice to still continue after the introduction of the protective tariff a grouping which was no more justified. In short I believe that Baare has already been everywhere, that he will have even put his iron in the fire with Minister Maybach and that he will take away lovely orders in front of our nose."

For this reason Krupp felt the firm should quickly tie up as many long term contracts for rails as possible: he estimated

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65. Alfred Krupp 22 July 1880 to Procura; Alfred Krupp 10 August 1880 to Hanns Jencke; Alfred Krupp 16 December 1880 to Procura, summaries in H. A. Krupp, F.A.H. II B. 356 fols 33-42.

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the cost of steel rail production at 105 marks, and he suggested rails be sold at an average price of 125 marks.[66]

It is interesting to note that Krupp's cost of production for rails had fallen by nearly a third - from 145 marks in March 1876 to 105 marks in April 1881.

In the 1880's, however, the rail cartel was once again revived, and this time on an international basis. The earliest proposer of such an idea was Wilhelm Heinrich Müller, who reported to his father on 9 January 1876:[67]

> "Herr Russell has enthusiastically taken up an idea suggested by me: to found a rail cartel, similar to the one which has existed for Germany for many years, for foreign countries as well. I would take over its direction as general representative. Herr von Hansemann is also interested in such an organization. At the moment this question is not yet ripe. The representation can only, because iron rails are not exportable to Belgium and England, relate to steel rails. The steel rail cartel however just recently fell apart because one could not reach a new contract. The works are now waging a war to the death, which must however once again naturally lead to a peace, and - after the heavy financial sacrifices - a lasting peace. Only when one has reached an agreement for the domestic market will it be time to extend the cartel to foreign parts."

The first international agreement for rails was signed on 3 January 1883 between Servaes, the General Director of the Phoenix, who represented the German rail cartel, and Director Wittgenstein for the Austrian cartel. (The Wittgensteins were an Austrian Jewish family who had important holdings in the Bohemian iron industry, notably

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66. Alfred Krupp, Essen, 2 April 1881 to Procura in: Alfred Krupps Briefe und Niederschriften vol. 19 (1881-1883) fols. 54-55.

67. Scheibler, Westdeutsche Ahnentafeln, p. 228.

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the Prager Eisen-Industrie-Gesellschaft, or "Prageisen"; the philosopher was a member of this family.) The second international rail cartel was concluded on 28 January 1884 in London, when fifteen British firms, five Belgian firms, and the German cartel founded the International Rail Manufacturers' Association. But the British and Belgians were never as enthusiastic about the cartel as the Germans, and when the market in Britain revived in 1886, the cartel was dissolved as of 30 June 1886. The Germans then drew up a tighter cartel among themselves plus the Eisenhüttenverein Düdelingen (of Dudelange in Luxembourg). The rail cartel was gradually extended to take in other railway materiel, such as fishplates, and served as the core of the Stahlwerksverband in 1903.[68]

D. Conclusion.

In the first part of this section, I hoped to show how the willingness of bankers lend to mediocre concerns (Dortmunder Union, Phoenix) did not mean that they were equally free with their money with talented industrialists. No German industrialist has a higher reputation than Krupp; a reputation established as early as the Great Exhibition of 1851. Yet the bankers treated Krupp very badly. This is why it was important for German industry that there were numerous small private banks in the 1850's; a Krupp could keep on knocking on many doors until he found one opened by a Deichmann or a Meyer-Cohn. The loan of 1874 shows the Disconto-Gesellschaft placed in a delicate position: it is

68. Mengeringhausen, Schienenfabrikation, pp. 80-91.

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already deeply involved with the Dortmunder Union, yet has to provide funds to one of the Union's bitterest rivals. We then see the Disconto-Gesellschaft attempt to deal with this problem: first by strong-arming Krupp to stop cutting prices, and when it could not do this because of Krupp's ally, the Seehandlung, it attempted to reach agreement between the Dortmunder Union and Krupp. A plan to divide up the Russian market was suggested, but never seems to have reached fruition; an agreement was reached, however, within the wider frameworks of the rail cartel. I want to emphasize once again that the impetus for this cartel, however, came from industry - not the banks.

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V. Investments in Coal-Mining: The Gelsenkirchener Bergwerks-Actien Gesellschaft.

A. Introduction

Among all the industrial companies founded by the Disconto-Gesellschaft, there are only two unqualified successes: the potash mine, Kaliwerke Aschersleben, and the Ruhr colliery, the Gelsenkirchener Bergwerks-Actien-Gesellschaft. Disasters like the Dortmunder Union are much more common: although not on such a large-scale nor lasting for so many years, the histories of the lead mines "Neue Hoffnung", "Bertha Isabella", and the Commerner Bergwerks- und Hütten-Actien-Verein, of the iron ore mine Harzer Union, of the collieries owned by the Bochumer Bergwerks-Actien-Gesellschaft and the Mengeder Bergwerks-Actien-Gesellschaft, of the Brunswick Railway Company, the Crefeld-Kempen district railway, and the Great Venezuela Railway, of Victor Popp's Internationale Druckluft- und Electricitäts-Gesellschaft show that the Dortmunder Union was not an isolated episode. I do not have the space to discuss any of these ventures in detail (although I have touched on the Mengeder Bergwerks-Actien-Gesellschaft above, pp.294-297) but I have listed them in outline form (see above, pp.40-43).

Ironically, the Gelsenkirchener Bergwerks-Actien-Gesellschaft shares the same origins with the Disconto-Gesellschaft's greatest failure, the Dortmunder Union: it too was a joint Gründung of the Ruhr industrialist Friedrich Grillo and the Disconto-Gesellschaft. The GBAG is often produced as proof that Grillo and Hansemann were not really at fault for the failure of the Union: the two companies, so

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similar in their origins, so different in their fates, show how aleatory business is, and we should not blame Grillo and Hansemann, but chance.[1] But this coincidence in founders does not cancel the fact that by the early 1870's the two enterprises already had strikingly different backgrounds. The Union merged widely separated works, with different needs and different products; the GBAG was made up of two neighbouring coal mines, under the same management for twenty years. The GBAG was founded according to a formula which had succeeded before, at the mine "Consolidation", as Grillo well knew; the Union according to a formula which had failed before, at the Phoenix, as Hansemann should have known. The collieries which were to form the GBAG had a decade of success behind them, under a brilliant manager, Charles Detillieux; the components of the Union had never been especially profitable, had often undergone drastic reorganization, and had had mediocre or strikingly bad managers, such as Nicolaus Druckenmüller and Bethel Henry Strousberg. But there were also elements Hansemann and Grillo could not be expected to foresee. The coal industry underwent no drastic revolution in the next twenty years, whilst the iron industry shifted from iron and puddled steel to Bessemer steel and then to the Thomas-Gilchrist process. All called for huge new investments - and the Union was saddled with old technology from the first. Furthermore, in the person of Emil Kirdorf Grillo and Hansemann chanced upon

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1. Maximilian Müller-Jabusch, So waren die Gründerjahre (Düsseldorf, 1957) p. 42.

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one of the greatest managers in the history of the Ruhr. Another ironic connection between the most and least successful enterprise in the Ruhr is that it was Wilhelm Heinrich Müller, the General Director of the Dortmunder Union and a friend of the Kirdorf family, who recommended Emil Kirdorf to Friedrich Grillo.[2] Finally, although one should not ascribe everything to it, we cannot entirely discount the factor of luck, which is especially important in the aleatory business of mining. The Union was remarkably unlucky. The GBAG's collieries, by contrast, were only rarely visited by accidents - extraordinarily good luck for a mining company.

The following outline will give an overview of the history of the GBAG:

Pre-history	1845-1857	Concessions granted for the coal mines "Rheine-Elbe" and "Alma".
	1855-1857	Transitory phase under the Phoenix.
	1857-1972	Mines sunk and start producing under Charles Detillieux.
	1873-1879	GBAG founded, fends off the depression.
	1880-1893	Period of growth through acquisitions on the way to cartellization.
	1893-1903	RWKS founded. Further growth and acquisitions in a cartellized coal market.
	1903-1918	Iron conquers coal in the RWKS. GBAG becomes a mixed coal and iron concern.
	1919-1926	GBAG absorbed into Stinnes concern and then into Vereinigte Stahlwerke.
	1926-1931	Pseudo-stabilization. Share purchases of GBAG by Friedrich Flick.
	1932-1945	Crisis of Vereinigte Stahlwerke, Flick bailed out by the state. Drastic reorganization, end of the traditional GBAG. Armaments boom, noiseless

2. Friedrich Artur Freundt, Emil Kirdorf. Ein Lebensbild. Zum fünfzigjährigen Gedenktage seines Eintritts in den Ruhrbergbau (Essen, [1921]) p. 10; Walter Bacmeister, Emil Kirdorf. Der Mann - Sein Werk (Essen, ²1936) p. 20.

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inflation, Vereinigte Stahlwerke reprivatized in 1936.
1945–1956 Vereinigte Stahlwerke broken up. Allies' plans for further dismantling and denazification fended off. Reconstruction.
1956–1966 Last hurrah of the coal industry. GBAG shifts more resources to oil production; 1963 discovers oil in Libya.
1966 Crisis of the coal industry begins.
1969 GBAG mines go to Ruhrkohle AG.
1973–1978 Veba acquires GBAG.
1979 Veba sells GBAG to Deutsche BP AG of Hamburg.

In the following chapter, I shall concentrate on the period 1873–1879. The GBAG's growth through acquisitions from 1880 does provide many interesting examples of the Disconto-Gesellschaft and Friedrich Grillo acting as intermediaries, but there are adequate published accounts, notably by Oskar Stillich and Friedrich Artur Freundt.[3] For the 1870's, however, Kirdorf's correspondence with his bankers has been preserved, and this correspondence has not hitherto been exploited. Kirdorf's correspondence with his bankers (chiefly Emil Russell) shows many parallels with other "dialogues between management and the supervisory board", such as that between Nicolaus Eich of Mannesmann and Max Steinthal of the Deutsche Bank which Hartmut Pogge-von Strandmann has recorded, and the dialogue between Jacob Hasslacher of the Rheinische Stahlwerke and Arthur Salomonsohn of the Disconto-Gesellschaft, which Werner Mosse

3. Oskar Stillich, Steinkohlenindustrie (Leipzig, 1906) pp. 144–196 (=Nationalökonomische Forschungen auf dem Gebiete der Grossindustriellen Unternehmung, vol. 2); Friedrich Artur Freundt, Kapital und Arbeit (Berlin, [1929]).

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has recorded.[4] The Kirdorf-Russell correspondence provides us with another glimpse of how the relationship between a universal bank and its industrial client could operate at its best.

B. The Establishment of the Gelsenkirchener Bergwerks-ACtien-Gesellschaft.

After his apparent success in founding the Dortmunder Union in 1872, Friedrich Grillo looked around the Ruhr for new projects. Among Grillo's new plans was one to acquire all the mines in the Gelsenkirchen depression (as the Essen Mulde, or geological depression was called - a place where the coal seams dip) under foreign ownership and consolidate them. A similar venture, the consolidation and merger of numerous mines to form the appropriately named "Consolidation" in 1863 had been one of Grillo's outstanding successes.[5] The Franco-German antagonism after the war of 1870-71 led French capital to shun, if not to withdraw from, Rhineland-Westphalia, and so Grillo considered the time ripe to take over the foreign-owned collieries. The mines under consideration were five: "Dahlbusch" - Belgian capital under the leadership of Joseph Chaudron; "Hibernia" and "Shamrock" - Anglo-Irish capital under the leadership of William Thomas Mulvany; and the French collieries "Rhein-Elbe" and "Alma".

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4. Hartmut Pogge-von Strandmann, Unternehmenspolitik und Unternehmensführung. Der Dialog zwischen Aufsichtsrat und Vorstand bei Mannesmann 1900 bis 1919 (Düsseldorf and Vienna, 1978); Werner E. Mosse, Jews in the German Economy: the German-Jewish Economic Elite 1820-1935 (Oxford, 1987) pp. 260-270.

5. Freundt, Kapital und Arbeit, p. 15; Die Steinkohlenbergwerke der Vereinigte Stahlwerke AG. Die Schachtanlage Alma in Gelsenkirchen (Essen, 1930) pp. 16-17.

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"Dahlbusch" turned Grillo down, and instead its owner, the Société Anonyme Belge-Rhénane de la Ruhr converted itself into the Bergwerksgesellschaft Dahlbusch in 1873. "Hibernia" and "Shamrock" entered into negotiations, but Grillo dragged them out for tactical reasons and missed his opportunity. Instead the Berliner Handels-Gesellschaft and S. Bleichröder bought the mines from the Gewerkschaft Hibernia for 5,386,000 thalers (16,158,000 marks) and formed the Hibernia und Shamrock Bergwerksgesellschaft, an AG with a share capital of 5,600,000 thalers (16.8 million marks).*

"Rhein-Elbe" and "Alma" were owned by the Société des Charbonnages de Gelsenkirchen Detillieux et Cie., a Société en Commandite par Actions (Kommanditgesellschaft auf Aktien), which had Charles Detillieux as its Gérant (Geschaftsinhaber). Detillieux agreed through an intermediary, the Berlin and Breslau private banker Jacob Landau, to sell his mines for 4,240,000 thalers (12,720,000 marks). The contract was signed on 15 January 1873 with

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6. Freundt, Kapital und Arbeit, p. 16; Gerhard Gebhardt, Ruhrbergbau. Geschichte, Aufbau und Verflechtung seiner Gesellschaften und Organisationen (Essen, 1957) pp. 117-118, 331; Wilhelm Kesten, Geschichte der Bergwerksgesellschaft Dahlbusch (Essen, 1952) pp. 27-32; Kurt Bloemers, William Thomas Mulvany (1806-1885). Ein Beitrag zur Geschichte der rheinische-westfälischen Grossindustrie und der deutsch-englischen Wirtschaftsbeziehungen im 19. Jahrhundert (Essen, 1922) pp. 70-74 (=Veröffentlichungen des Archivs für Rheinisch-Westfälische Wirtschaftsgeschichte - Rheinisch-Westfälisches Wirtschaftsarchiv in Köln, vol. 8); Hans Fürstenberg, Carl Fürstenberg. Die Lebensgeschichte eines deutschen Bankiers 1870-1914 (Berlin, 1931) pp. 122, 133, 369. Fürstenberg confuses the two Mulvany enterprises Hibernia & Shamrock and the Prussian Mining and Ironworks Company, which owned the mines "Hansa" , "Zollern", and "Erin". The latter went bankrupt in 1877, but Hibernia was unaffected.

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effect from 1 January. Grillo, who never let himself be bound to one bank, but who flirted with them all, in this case decided to bring in the Disconto-Gesellschaft to help him set up the company; the year before, they had combined to form the Dortmunder Union. It was a natural choice, since one of Detillieux's bankers was that close ally of the Disconto-Gesellschaft, the Cologne bank Sal. Oppenheim jr. + Cie. On 3 January 1873 Grillo and the Disconto-Gesellschaft founded the Gelsenkirchener Bergwerks-Actien-Gesellschaft, with a share capital of 4½ million thalers (13½ million marks) - 260,000 thalers more than Detillieux sold it for. For the Gründerjahre, that was by no means excessive.[7]

The chief assets of the company - the collieries "Rhein-Elbe" and "Alma" - were extremely valuable possessions. They bordered on each other forming a fairly regular concession where the coal lay well in the seams and which was larger than most of the neighbouring mines. The size of "Rhein-Elbe" was 414 hectares, "Alma" 347 hectares, together 761 hectares; among neighbouring mines, "Hannover" was 414 hectares, "Dahlbusch" 400, "Holland", "Centrum" and "Königsgrube" 310 hectares apiece, "Bonifacius" 276 and the famous "Hibernia" only 207 hectares. "Consolidation" and the vast "Monopol" were bigger, but "Monopol" had yet to begin production, and consolidated (as they would be in

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7. Statute, Société des Charbonnages de Gelsenkirchen Detillieux et Cie (Paris, 25 April 1872) p. 3, BBA, GBAG Archiv, Az. 1. 10 00 Nr. 1; Freundt, Kapital und Arbeit, pp. 13, 16; Schachtanlage Alma, pp. 16-19; Gebhardt, Ruhrbergbau, p. 198; Rondo E. Cameron, France and the Economic Development of Europe 1800-1914. Conquests of Peace and Seeds of War (Princeton, 1961) pp. 374-375.

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1877) "Rhein-Elbe" and "Alma" together would even overtop "Consolidation". Because the mines were in the centre of the Essen geological depression (Mulde),they possessed all the better types of coal, from the gas coal seams to anthracite. The anthracite, lying deepest, could not be profitably mined, but it was not a very valuable type of coal. The seams were remarkably thick and of high quality; most of the gas coal seams were over a metre thick. The fat coal seams were even thicker, so that famous seams like "Laura" could boast of a thickness of 3.25 metres, "Viktoria" 2.40 metres, "Gustav" 2 metres, "Mathias" 2.50 metres, "Herrenbank" 2 metres and "Dickebank" 2 metres. "Rhein-Elbe" had only been mined at the 152 metre level; and since "Alma" had only commenced production in 1872, she was all but virgin.[8]

The two mines were remarkably good objects; and in Emil Kirdorf they found one of the most talented managers in the Ruhr. In his very first year Kirdorf won his spurs by increasing output substantially:

Monthly production of the GBAG (tonnes), 1873[9]

January	23,335.2
February	21,321
October	38,911.8
December	36,259.6

Mines and mine manager alike had remarkable qualities. They

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8. Freundt, Kapital und Arbeit, pp. 16-17; Bruno Simmersbach, Die wirtschaftliche Entwicklung der Gelsenkirchener Bergwerks-Aktien-Gesellschaft von 1873 bis 1904 (Freilberg/Saxony, 1906) pp. 5-6.

9. Simmersbach, Entwicklung der GBAG, p. 31; Freundt, Kirdorf, p. 14.

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would be put to a very severe test in the harsh years which followed the Crash of 1873.

C. Statistical Summary, 1873-1880.

Dividends and Share Prices (in %)

	Dividends	Share Price		Dividends	Share Price
1873	23%	140%	1877	5½%	85%
1874	17%	137¼%	1878	6%	89%
1875	10%	116%	1879	6%	139½%
1876	7½%	104.9%	1880	7%	122%

NOTE: Share Price Berlin stock exchange on 31 December of each year.
SOURCE: Saling's Börsen-Papiere 37th edition (Berlin, Leipzig, Hamburg 1913) p. 702.

Production, Employment and Productivity at "Rhein-Elbe" and "Alma", 1873-1880

	Production (tonnes)		Employees (yearly average)		Production per man per shift (tonnes)	
	Rhein-Elbe	Alma	Rhein-Elbe	Alma	Rhein-Elbe	Alma
1873	206,040	156,666	615	665	1.19	0.77
1874	239,721	256,547	737	943	1.24	0.91
1875	263,763	313,251	722	1261	1.32	0.89
1876	281,776	324,524	760	1260	1.30	0.86
1877	333,300	335,442	784	1185	1.40	0.97
1878	369,102	357,928	819	1153	1.54	1.07
1879	406,908	356,603	882	1083	1.57	1.10
1880	380,192	345,977	971	1039	1.52	1.13

SOURCE: Die Steinkohlenbergwerke der Vereinigte Stahlwerke AG, Die Schachtanlage Alma in Gelsenkirchen (Essen, 1930) pp. 12-13, 15-16.

Wages, Production Costs, Coal Prices, Profits (in marks)

	A Wages (per man and shift)	B Cost of Production (marks per tonne)	C Coal Price (marks per tonne)	D Difference of cols B and C
1874	4.41	6.743	15.19	8.45
1874	4.17	6.140	13.30	7.13
1875	3.67	5.552	9.55	4.00
1876	3.49	5.423	8.15	2.73
1877	3.24	4.520	6.33	1.81
1878	3.19	3.97	5.78	1.81
1879	3.03	3.74	5.35	1.61
1880	3.03	3.81	5.90	2.09

SOURCES: Oskar Stillich, Steinkohlenindustrie, pp. 147, 171-172; Friedrich Artur Freundt, Kapital und Arbeit, p. 156.

D. 1873-1879: An Overview.

Before I discuss the specific problems raised by Kirdorf's correspondence with his bankers, I want to outline

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the GBAG's experience during the 1870's, as depicted by Kirdorf in the annual reports.

The Gelsenkirchener Bergwerks-Actien-Gesellschaft was founded at a very late stage in the Gründerjahre, but not too late to enjoy one year more of boom: the decline which hit the railways in 1872, and the ironworks in 1873, only hit the coal market in 1874. Long term contracts did prevent the GBAG from immediately reaping the full benefits of the remarkable increase in coal prices which took place in 1873, and the boom also brought its disadvantages: between January and December 1873 wages increased 30.7%. There was a shortage of railway wagons, and the mine had to stockpile coal until the shortage was relieved. Fortunately by December it had sold nearly all its coal. Gelsenkirchen coal was sold abroad and used to make gas to illuminate Paris. The company also sold coal to eastern Germany and to railway companies. 100,000 wagons of coal had been sold under contracts concluded in 1873, but to be fulfilled in 1874 - at 1873 prices. Kirdorf commented further, as he wrote the annual report in spring 1874:

> "The totally extraordinary height coal prices have reached can no longer be maintained without damaging other branches of industry, and the expected reverse has now come about. We can expect, instead of a roaring boom, quieter trading conditions."

The company hoped it could compensate for falling prices by increasing output and reducing the costs of production.[10]

In the annual report for 1874 Kirdorf reported that the

10. GBAG Annual Report, 1873, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1.

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drop in coal prices had come, but far more than expected: prices fell by as much as 30-50%. As early as 11 January 1874 a meeting of the Essen operations committee (one of the two committees of the administrative board: the other was the Berlin financial committee) urged the following economies because of the falling coal prices:

1) Dismissal of all workers whose services could be dispensed with;
2) All possible cost savings;
3) Gradual wage reductions.

Later that year the management could report to the administrative board the success of its attempt to limit the number of workers to only those needed, to reduce wages and also to increase productivity, and thereby reduce the production costs which had increased so substantially in the years of the boom. In fact, on "Alma" the workforce was reduced, yet output rose; this was because the previous year some special timbering operations had to be carried out, which were now complete. Fortunately for Gelsenkirchen, the good lie of the seams made for low production costs, and the good quality of the coal meant there was always a demand for it. But the coal market was extremely cutthroat. In some instances the company had to grant price concessions, in other cases, especially with coal merchants, the company had to allow them to pay compensation (Reugeld) to get out of their contracts; this unsold coal then had to be dumped on a weak market. The GBAG said it could have sold more of its gas coals to the Berlin municipal gasworks, if it had not been for the 20% increase in railway freight rates, effective 1 August 1874. A history of the GBAG written in

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1898 blamed this rate increase for the GBAG's loss of the Berlin market to Upper Silesia. Actually, the railways granted concessions to the GBAG so it kept its customers (as we will see below). The increase could not be made to stick; the railways were too hungry for business. The GBAG continued to sell gas coals to Paris and other gas companies, and also sold coal to various railway companies.[11]

Coal demand acted strangely in 1875. From the beginning of the year prices fell steadily. Suddenly in the autumn demand became so lively that it was almost impossible to satisfy the call for better qualities of coal, especially gas coals. In November 1875 the demand could be satisfied only with the greatest effort. "Alma" achieved the then incredible output of 24,000 centners (1200 tonnes) a day. In the coal production of that year in the Regierungsbezirk Arnsberg - the Prussian regional government district which included the most productive part of the Ruhr - "Alma" ranked second, after the giant "Consolidation"; "Rhein-Elbe" was sixth. By the time Kirdorf wrote the annual report in spring 1876, however, demand had fallen off again. But Gelsenkirchen had expanded the market for its gas coals, and was now exporting to Belgium as well.[12]

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11. Sitzung, Essener Betriebs-Comité, 11 January 1874, BBA, GBAG Archiv, Az. 1 24 00, Nr. 1; Bericht der Direction für das Geschäftsjahr 1874, attached to Verwaltungs-Rath Sitzung, 16 February 1875, BBA, GBAG Archiv, Az. 1 24 00, Nr. 1; GBAG Annual Report, 1874, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1; GBAG Festschrift 1898.

12. GBAG Annual Report, 1875, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1.

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1876 saw matters get steadily worse:

> "If previously many people could observe that although the iron industry was in a bad state, coalmining in Westphalia had made astonishing progress and thereby concluded that things were not so bad with industry overall, the development of recent months has shown that the coal industry too is seriously threatened by the ironworks' reductions and closures of operations, and cannot easily withstand the resulting shortfall in demand. The lesser grades of coal especially find no takers, even at rock-bottom prices."

The mild winter of 1876 might explain why there was no increase in demand, but not why demand should fall, as it had since December 1876. Fortunately the mines in the area of Gelsenkirchen had held up better because of the high quality of their coal. The GBAG had been able to sell all its coal at an average price of 40.77 marks per 100 centners (8.154 marks per tonne). The company was fortunate that much of its production was already secured by multi-year contracts, at favourable prices by the level of 1876. "Alma" enjoyed a high reputation for its gas coals, which the company was now mining through the second level of "Rhein-Elbe" (this practice foreshadowed the consolidation of the two mines in 1877). The production of the mine increased again, but the labour force only insubstantially; the company instead had the miners work overtime during periods of peak demand. Since, however, prices were continuing to fall, the company was considering cutting production. In 1874 the company had begun to sink a second shaft for "Rhein-Elbe": this reached its intended depth of 320 metres this year, and was then finished inside and ready to begin

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production in 1877.[13]

In 1877 the company increased production and productivity yet again. "Rhein-Elbe" was able to do that more easily than "Alma", for the first level on "Rhein-Elbe" required no more timbering and ripping, but all work there was exclusively coal-getting. "Alma" had a relatively bad lie of the seams, so its increase in productivity was all the more noteworthy. Since 1873 the GBAG's production costs had fallen by 11.39 pfennigs per centner of coal, compared to a fall of 44.34 pfennigs in the sale price (compare table above). If "Alma" had not reduced its costs of production so substantially, its coal would have sold at a loss from March 1877 onwards. It is more than likely that Gelsenkirchen at specific moments sold coal below cost, in other words engaged in dumping. But the term "dumping" implies something intended, which does not correspond to the constantly fluctuating costs and prices of the coal market: Gelsenkirchen did not "dump", the market gave way before it, and Kirdorf sold the coal anyway in the hope that by the time he fulfilled these contracts he would have reduced his costs enough so he could make a profit. Coal prices remained soft until the second half of 1877; in September they firmed, in the last quarter the liveliest demand drove them up, but only for a short period. If the overall poor industrial outlook meant that coal prices had to fall, there

13. GBAG Annual Report, 1876, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1; Zeitschrift für das Berg-, Hütten-, und Salinen-Wesen im Preussischen Staate (Berlin, 1875-1877) vol. 24, Statistischer Theil, pp. 98-99; vol. 25, Statistischer Theil, p. 97; vol. 26, Statistischer Theil, p. 98.

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was still no reason for them to fall as far and as fast as they had. Gelsenkirchen had resisted this movement to the best of its ability. But Gelsenkirchen would rather cut production than enter into long term contracts which offered little insurance against an increase in the costs of production. Fortunately, the figures for January and February 1878 seemed to indicate that an upswing (perhaps the upswing) was at hand.[14]

1878 was not as bad as 1877, but still could not be described as a true recovery. Like other companies, the GBAG occasionally was forced to have playshifts (Feierschichten) and to stockpile coal. In 1878 its stockpile was 4750 tonnes. Kirdorf observed in the annual report that the cold weather winter of 1878-1879 would help some, but "a true improvement we can only expect from a revival of domestic industry (vaterländische Gewerbetätigkeit), which we hope will not be long delayed." Kirdorf probably means that he hopes the agitation for iron tariffs will succeed. Once again the company succeeded in reducing its costs of production. The GBAG also invested its remarkably substantial cash pile in 4% Prussian consols and German government bonds.[15]

The following year Kirdorf could finally report that the crisis was over:

"1879 showed us in the first three quarters the

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14. GBAG Annual Report, 1877, BBA, GBAG Archiv, Az. 1 30 00 Nr. 1.

15. GBAG Annual Report, 1878, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1.

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> same troubled picture of more economic stagnation as in previous years; but it has brought us the conversion to a national economic policy and the lively upswing in the last quarter in business activity, especially in heavy industry, finally assures us of the prospect of better times. We hope all the more for a lasting and sustainable improvement for our company as well, since at the at first too stormy price increases are gradually being directed into the right channels, which will bring a stable development and prosperity for all branches of industry. The excessive speculation of the years 1872-1874 ultimately brought about the equally excessive pessimism of the last five years, which is now over at last."

The "national economic policy" was Bismarck's re-introduction of pig-iron tariffs. The coal industry revived because the winter of 1879-1880 was very cold and set in early; demand from the iron industry also picked up, which had orders for rails flooding in from the United States.[16]

In the Depression of 1875-1879, 60-70% of coal mines in the Ruhr operated at a loss.[17] The GBAG, by contrast, paid a dividend every year (often a very high dividend) and was also able to write down its properties and endow a large reserve fund. Kirdorf's hand vis-à-vis his bankers must

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16. GBAG Annual Report, 1879, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1; on the cold winter of 1879-1880, Walther Däbritz, "Entstehung und Aufbau des rheinisch-westfälischen Industriebezirks" in: Beiträge zur Geschichte der Technik und Industrie. Jahrbuch des Vereines deutscher Ingenieure, ed. Conrad Matschoss (Berlin, 1925) vol. 15, p. 64; on the demand from the United States for rails, see the interesting letters of Gustav Godeffroy to Gerson von Bleichröder, Hamburg, 7 October and 20 October 1879, Bleichröder Archive, Box XXXIV, folder 7.

17. "Emil Kirdorf und die Gelsenkirchener Bergwerks-Aktien-Gesellschaft" in: Die Stadt Gelsenkirchen (Berlin-Friedenau, 1927) p. 224 (=Monographien deutscher Städte. Darstellung deutscher Städte und ihrer Arbeit in Wirtschaft, Finanzwesen, Hygiene, Sozialpolitik und Technik. vol. 20: Gelsenkirchen).

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have been strengthened by the fact that the GBAG's lowest dividend (5½%, 1877) was never as low as those of the Disconto-Gesellschaft: 4% (1876) and 5% (1877). How did the GBAG succeed where others failed? First of all, "Rhein-Elbe" and "Alma" were remarkably good properties: their coal lay well, it was a good quality gas coal, they were much larger than nearly all their competitors. There was also an element of luck: "Rhein-Elbe" and "Alma" were not visited by serious accidents during these critical years. Thirdly, Kirdorf was a manager of genius. Fourth is the special factor of the long term contracts with the Paris gasworks - which I will discuss below. Finally, to survive in this period one had to increase productivity. Output per man per shift reached a very high level (for German conditions) in this period, a level almost unique in the history of the mine (see table above). The desperate need to increase output per man must have torn at the nerves of masters and men alike. Freundt, who wrote his history of the GBAG in close contact with Kirdorf, gives vent to the despair men must have felt in 1877:

> "Industry has another ten years before it in which it must fight about wages, production costs, prices, freight rates, markets, technology, in short fight for its existence. Ten years - ! .... A generation uses up the best years of its manhood in this struggle."

It is noteworthy that Freundt assigns the end of the period of falling prices to the same year, 1897, as does S. B.

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Saul.[18] Kirdorf expressed this despair no less eloquently in a letter to Emil Russell of 22 February 1877:

> "Market conditions are pitiless at the moment; the prices are falling in a shocking fashion and the competition will be certain to undercut it. One is therefore forced to be travelling almost constantly, and after all that in spite of all efforts one still cannot keep up the sales."[19]

Profits bore the brunt of crisis: dividends at the GBAG fell from 23% (1873) to 5½% (1877), a fall of 76%. The GBAG's net profit on each tonne of coal sold fell by 79%, while coal prices fell only 58%. Wages fell the least, declining by 27% between 1873 and 1877, a decline partly offset by declines in principal foodstuffs: wheat fell by 18%, rye by 28%; potatoes fell by 35% by 1874, but recouped half their loss and in 1877 were only 18% lower than in 1873. If we assume that these foodstuffs convey an adequate picture of miners' expenses, in "real terms" GBAG miners' wages fell by only some 10%. If miners' wages had been linked to coal prices more directly, such as through a sliding scale as existed in South Wales at the same time, they would have been worse off. On the other hand, when recovery came in 1879 and 1880, the tables above show profits rapidly increasing while wages remain stable. The GBAG wage figures are for average wages per shift, however; since productivity increased, those paid by piece rates

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18. Freundt, Kapital und Arbeit, p. 31; S. B. Saul, The Myth of the Great Depression 1873-1896 (London and Basingstoke, 1969) pp. 13, 15, 17.

19. Emil Kirdorf, 22 February 1877 to Emil Russell, BBA, GBAG Archiv, Az. 1 24 70.

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(Gedinge) - generally faceworkers, the "labour aristocracy" - increased their share of wages at the expense of those not paid by piece, whose wages would have been cut more severely than average.[20]

One thing which emerges from the annual reports is that Kirdorf was gradually convinced that what the coal industry needed was not high prices per se, but rather stability. In 1873 he noted that the high prices could not be sustained without damaging the rest of industry. In November 1875 there appears to have occurred what on Wall Street would be called a classic bear market rally - prices had fallen so far that consumers felt they could not fall any further, panicked and all jumped into the market at the same time. In the last quarter of 1877 there was the "liveliest demand". The winter of 1878-1879 was also a time of lively demand. Thus the overall picture of the 1870's is one of falling coal prices, but frequently punctuated by buying panics - usually in winter as one might expect. Kirdorf summed up the decade by saying that excessive speculation in 1872-1874 had led to just as excessive pessimism in the following five years. The other idea which the experience of the 1870's impressed upon Kirdorf was the need to cut production. By 1877 Kirdorf was not only afraid that production costs could not be reduced further: he was afraid he could not sustain the low level already achieved, and would rather cut production than enter into long term

20. Freundt, Kapital und Arbeit, p. 30; J. H. Morris and L. J. Williams, The South Wales Coal Industry 1841-1875 (Cardiff, 1958) pp. 282-284.

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contracts for fear lest a sudden move of production costs against him mean he could only fulfil his contracts at a loss. But such a move taken unilaterally would only benefit competing mines, and in the absence of a multilateral agreement the GBAG had no choice but to increase production still further.

It is interesting to see how these two ideas, the need for price stability and the need to restrict production multilaterally, began to germinate in Kirdorf's mind during the 1870's. This is not to say that from 1 January 1873 Kirdorf was seeking nothing more than to establish the Rhenish-Westphalian Coal Cartel. But by the end of the 1870's the germs were already present.

One word more about the Depression of the 1870's. It was clearly a tremendous strain constantly to increase production, constantly to increase sales. But look at the record of the GBAG: production rose, productivity rose, a good dividend was always paid, wages fell only moderately, employment was stable and (after 1880) rising. Not all companies had such a happy experience: the Rheinische Stahlwerke suspended payment in 1877, the Harzer Union went bankrupt in 1879, the Schaaffhausen'scher Bankverein, a major lender to Ruhr industry, paid no dividends for 1875 and 1876 and had to be reorganized. Gelsenkirchen was a stunning island of prosperity.

E. Special Problems of the 1870's

1. Introduction: Kirdorf's Correspondence with his Bankers

It is especially fortunate that Kirdorf's

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correspondence with the Disconto-Gesellschaft in this period has been preserved in the files of the GBAG. There is no other collection of documents - with the partial exception of Carl Meyer's correspondence at Krupp's - which casts such a vivid light on what it was like to be a Ruhr industrialist in the 1870's. At times Kirdorf could be very deferential towards senior Disconto-Gesellschaft partners: on 7 November 1876 Hansemann could scold Kirdorf like a schoolboy over an error in the annual report which arose because Kirdorf got the number of workers on "Alma" wrong.[21] A similar instance occurred in early 1880 when Kirdorf wrote up the balance sheet for 1879 and concluded that to write as much off as in previous years would not permit the payment of a 6% dividend, and recommended that the machinery and stocks (inventories) be written down by 5% instead of 7½%. Alfred Lent wrote back and agreed, but proposed instead that Hövelmann's farm (one of numerous pieces of property the GBAG acquired in the 1870's, presumably because of subsidence) be depreciated by 7½% instead of 10%; and Kirdorf accepted this suggestion. At the time, Lent, although a Disconto-Gesellschaft partner, was not yet a member of the administrative board of the GBAG - he joined it in 1883 - so theoretically he had no right to help draft its annual balance sheet.[22] Most of Kirdorf's

21. Adolph von Hansemann, 7 November 1876 to Kirdorf, BBA, GBAG Archiv, Az. 1 24 70.

22. Kirdorf, 6 February 1880 to Russell; Alfred Lent, 17 March 1880 to Kirdorf; Kirdorf, 18 March 1880 to Lent, BBA, GBAG Archiv, Az. 1 24 70; Gelsenkirchener Bergwerks-Aktien-Gesellschaft 1873-1913 (Düsseldorf, [1913]), Appendix 5.

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correspondence, however, is with Emil Russell, with whom he developed a much closer working relationship than he could with the much older Hansemann (Kirdorf was born in 1848; Russell in 1837; Hansemann in 1826). Russell and Kirdorf would meet before meetings of the administrative board and discuss all outstanding questions. A letter of Russell from Dortmund on 16 February 1877, for example, said that such a meeting was unnecessary on that occasion, because they agreed on everything and Kirdorf's material was very clear.[23] This close relationship with Russell could lead to bizarre situations: in June 1877 Russell and Kirdorf held the proxies of the Disconto-Gesellschaft in the annual general meeting of the Berg-Mark Railway Company. It would be hard to imagine anything more incestuous: the largest German bank has its partner, Emil Russell, who from 1876 until 1881 was also General Director of one of the largest Ruhr ironworks, and Kirdorf, the director of one of the largest Ruhr collieries, represent it in the annual general meeting of one of the most important railways serving the Ruhr. All three industries had acute conflicts of interest: higher coal prices hurt the ironworks and the railways, higher iron prices hurt the railways, mineowners and ironmasters were constantly complaining that freight rates were too high. No doubt it further impressed on Kirdorf the need to look beyond the petty interests of the collieries to

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23. Emil Russell, Dortmund, 16 February 1877 to Kirdorf, BBA, GBAG Archiv, Az. 1 24 70.

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the general interests of all of heavy industry. At the time he was more concerned with getting into the good books of the Disconto-Gesellschaft. "It was an honour and a pleasure for me," he wrote to Russell, "to be of service to you and your valued company."[24]

2. Gas Companies : A Vital Market

As I have said before, the years 1869-1872 witnessed a railway boom; in 1872, however, high prices began to kill off the boom,and the cycle reversed itself savagely. It was easier to survive in the 1870's if a company could escape from this vicious circle. The fact that the GBAG's coals were ideally suited for producing gas, and the contracts with gasworks which it thereby won, gave the GBAG exactly such a means of escape: a market which was not dependent on railway building. Gasworks resisted the crisis better than nearly any other industrial companies. Privately owned public utilities have a traditional reputation as one of the most secure investments: and this was certainly true of the German gasworks after the Crash of 1873. The premier German gas company was the Deutsche Continental-Gas-Gesellschaft of Dessau ("Contigas"), founded on 12 March 1855, which in 1876 operated gasworks in sixteen cities: Dessau, Erfurt, Eupen, Frankfurt/Oder, Gotha (leased), Hagen, Herbesthal, Luckenwalde, Mönchen-Gladbach/Rheydt, Mülheim/Ruhr, Nordhausen, Potsdam, Ruhrort, and in Russia Warsaw and Lemberg (Lvov), in Austria Cracow. The share price and

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24. Kirdorf, 20 June 1877 to Russell; Russell at the Union, 25 June 1877 to Kirdorf at "Rhein-Elbe"; Kirdorf, 26 June 1877 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

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dividends of Contigas show a remarkable stability:

Dividends and Share Prices of Contigas, Dessau (in%)

	Dividend	Share Price
1869	11½%	166%
1870	11½%	160%
1871	12½%	184%
1872	14½%	184%
1873	13½%	174%
1874	13%	174 3/4%
1875	13 1/3%	169%
1876	13 1/3%	169 1/4%
1877	13%	167%
1878	13%	139%
1879	13%	165%
1880	13%	175%
1881	13%	187%
1882	13%	170%
1883	13%	187%

NOTES: *Bourse takes fright over implications of electric light.

SOURCE: Saling's Börsen-Papiere, Eighth edition, (Berlin, 1884) pp. 489-491, 496-498.

The dividends and share prices of other German gas companies listed in Saling's Börsen-Papiere - the Allgemeine Gas-Actien-Gesellschaft of Magdeburg, the Neue Gas-Gesellschaft Nolte of Berlin, the Thüringer Gas-Gesellschaft of Leipzig and the Schlesische Gas-Actien-Gesellschaft of Breslau - show a similar stability. Somewhat surprisingly, the gas companies were able to preserve their position against electric light because electric light was very slow to come on stream, and most gas companies had their local concessions amended so that they supplied electric light as well.[25] The gas industry never consumed as much coal as did the ironworks and the railways, but the unusual stability of

25. This account of the German gas industry relies on the biography of the chief manager of Contigas, Oechelhäuser: Wolfgang von Geldern, Wilhelm von Oechelhäuser als Unternehmer, Wirtschaftspolitiker, und Sozialpolitiker (Munich, 1971) (= Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie, Beiheft 7).

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the market made it very attractive. One man with a most expert knowledge of the coal market, the Upper Silesian coal merchant Eduard Arnhold, invested in the Berlin-Anhaltische Maschinenbau-Actien-Gesellschaft because that company produced machinery for the gas industry, and Arnhold wished to establish links to the gas industry to expand the market for Upper Silesian coal.[26]

Strousberg made the bourse's high opinion of Gelsenkirchen's Paris gas coal contracts an element in his attack on Friedrich Grillo:

> "I do not attack Herr Grillo because he has put a high estimate on the value of his collieries, but rather I disapprove of the blatant share pushing (Marktschreiereien) which he uses to achieve a fraudulent agio. The reports of multi-year contracts with Paris for gas coals, among other things, are designed to drive up the price of the shares."

Strousberg was often an extremely perceptive financial journalist, but like Otto Glagau, for whom Gelsenkirchen was "the peak of swindle", he could not distinguish between a swindle and a perfectly solid company.[27] The bourse was right, and Strousberg wrong, in pinpointing the gas coal contracts with Paris as an excellent foundation for Gelsenkirchen's prosperity.

The business relationship whereby Gelsenkirchen coal

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26. Kurt Zielenziger, Juden in der deutschen Wirtschaft (Berlin, 1930) pp. 157-158.

27. Bethel Henry Strousberg, Dr. Strousberg und sein Wirken (Berlin, ²1876) p. 88; Otto Glagau, Der Börsen- und Gründungs-Schwindel in Deutschland (Zweiter Theil von "Der Börsen- und Gründungs-Schwindel in Berlin".) (Leipzig, 1877) p. 528; Müller-Jabusch, Gründerjahre, p. 42.

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illuminated Paris went back to the Detillieux period.[28] It is ironic to consider that the later Pan-German Kirdorf should have owed much of his success to French business connections; but as Böhme has observed, Kirdorf could be as cool and sober in business as he was a hothead in politics.[29] In fact, during the first few years of the GBAG Kirdorf worked side-by-side with a French holdover from the Detillieux period, August Demmler.[30]

We have the minutes of a meeting of the Essen committee of 10 May 1875 discussing the offer of the Paris Gas Company to purchase 90,000 wagons of coal from 1876-1880 at 10 francs (= 12.50 marks) a tonne. A lengthy debate ensued; it was a difficult decision because of the size of the contract and the price, which was below the current market price. In the end, the committee decided to accept the offer because it would only amount to a seventh of Gelsenkirchen's output, and Gelsenkirchen's output was rising. If the coal market improved Gelsenkirchen would have more than enough coal to sell at better prices. At the same time Gelsenkirchen still made a handsome profit at the comparatively low price of the contract, so if the coal market collapsed it had a good insurance policy. The committee agreed to take up the offer, but to try to limit

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28. GBAG Annual Report, 1873, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1; Freundt, Kirdorf, p. 13.

29. Helmut Böhme, "Emil Kirdorf, Überlegungen zu einer Unternehmerbiographie" in: Tradition. Zeitschrift für Firmengeschichte und Unternehmerbiographie (Munich, 1969) vol. 14, pp. 36, 41, 46.

30. Gebhardt, Ruhrbergbau, pp. 198, 308.

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it to 1876-1878, possibly 1879, so it would last only three or four years.[31] In the event, the committee must have regretted they had not made the contract longer, as a glance at the table of coal prices above will show. On 29 May 1876 the GBAG signed another contract with the Paris Gas Company.[32]

Kirdorf showed himself eager to oblige his most important customer with those little things which add up in a business relationship. Thus Kirdorf tried to obtain for Edouard Becker of the Paris Gas Company, per their request, a position on the German stand at the Paris Exhibition of 1878.[33] Similarly, when Aschmann, the GBAG's cashier and bookkeeper, quit to take up a post at the colliery "Hugo", Kirdorf let him leave as soon as possible, partly because that was his policy when anyone left to go to a competitor, partly as a favour to some "Paris friends" who were interested in "Hugo".[34] These French links presumably led to a proposal in September 1881, when a Paris finance committee offered the GBAG a partnership in a planned (alas, unspecified in the documents: iron ore?) Spanish venture. Russell was sceptical of the proposal: since the beginning of the year a disturbing promotion swindle (bedenklicher

31. Essener Betriebs-Comité, Sitzung 10 May 1875, BBA, GBAG Archiv, Az. 1 24 00, Nr. 1.

32. Kirdorf, 29 May 1876 to Hansemann in Berlin, BBA, GBAG Archiv, Az. 1 24 70.

33. Kirdorf, 11 November 1876 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

34. Kirdorf, 30 June 1879 to Hansemann, BBA, GBAG Archiv, Az. 1 24 70.

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Gründungs-Schwindel) had raged in Paris; even if the firms were respectable, it could lead to comments in the press.[35] Russell was remarkably prescient, since the new year brought the Bontoux crash.

A chance to get another gas company as customer was killed off by the high freight rates of the Prussian State Railways. Senator Gustav Godeffroy, the president of the supervisory board of the Norddeutsche Bank and a member of the GBAG's administrative board, wanted to use Gelsenkirchen coal in the Hamburg gasworks. The Cologne-Minden Railway offered a rebate; but because part of the journey lay over lines of the Prussian State Railway, the state railway claimed all the rebate. Until Cologne-Minden reduced its rates still more, good German money would continue to wander to Britain to buy coals from Cardiff. To provide Godeffroy with another instance of the hawkish state railways, especially aggressive since the rate increase of 1 August 1874, Kirdorf sent along a letter of his brother Adolf, manager of the Aachener Hütten-Verein at the Rothe Erde near Aachen. As if it was not hard enough to compete with Belgian industry, which had cheap freight rates within Belgium, good water routes, and better quality workers who did not lose time for school or military service, freight rates from Dolhain, Liège and Charleroi to German cities were cheaper than from Rothe Erde. The Rhenish Railway - which, Emil remarked, was often quite decent in such matters

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35. Russell, Berlin, 12 September 1881 to Kirdorf at "Rhein-Elbe", BBA, GBAG Archiv, Az. 1 24 70.

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- wanted to reduce rates accordingly, but was being resisted by the accursed state railways. At least two Rhenish industrialists, then, had no cause to be surprised when the state takeover of the railways at the end of the 1870's produced no improvement in freight rate schedules.[36]

As mentioned above, the GBAG was able to retain the contract with the Berlin municipal gasworks in spite of the freight rate increase of 1 August 1874 thanks to special concessions from the railway companies. This contract caused an interesting conflict between the Disconto-Gesellschaft and the GBAG. The Disconto-Gesellschaft had a very close relationship with the Magdeburg-Halberstadt Railway Company.[37] One would expect the Disconto-Gesellschaft to try to get Magdeburg-Halberstadt to burn Gelsenkirchen coal, and to try to get Gelsenkirchen to send its coal via Magdeburg-Halberstadt. This was indeed the case. On 19 May 1877 Emil Russell wrote to Kirdorf that Magdeburg-Halberstadt had requested that Gelsenkirchen send its coal shipments to Berlin, that is for the Berlin municipal gasworks, over the Cologne-Minden-Magdeburg-Halberstadt line (i.e. Minden-Hannover-Lehrte-Stendal-

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36. Emil Kirdorf, 12 January 1877 to Senator Gustav Godeffroy in Hamburg; Adolf Kirdorf, Director, Aachener Hütten-Actien-Verein, Rothe Erde bei Aachen, 9 January 1877 to Godeffroy, BBA, GBAG Archiv, Az. 1 24 70; Däbritz, "Entstehung und Aufbau des rheinisch-westfälischen Industriebezirks", p. 66.

37. Walther Däbritz, Gründung und Anfänge der Disconto-Gesellschaft, Berlin. Ein Beitrag zur Bank- und Wirtschaftsgeschichte Deutschlands in den Jahren 1850 bis 1875 (Munich and Leipzig, 1931) pp. 163-164; cf. the remarks of Strousberg, Dr. Strousberg und sein Wirken, p. 306.

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Berlin; Magdeburg-Halberstadt controlled the Berlin-Lehrte line). They promised to match any concessions offered by the competition. Russell could only support this request, especially since Gelsenkirchen supplied Magdeburg-Halberstadt with coal. Russell had promised the railway to support their demand; he also assured Kirdorf that the coal supply contract would be awarded to Gelsenkirchen as it had in the past. Kirdorf wrote back two days later. For the moment the contract with the Berlin gasworks had expired and there was nothing to transport, although shipments would resume on 1 July. Gelsenkirchen did favour Magdeburg-Halberstadt, but it would not neglect the other lines entirely, especially because it was now negotiating a contract with the Berlin, Potsdam, and Magdeburg Railway Company to supply them with coal. The Berlin, Potsdam, and Magdeburg Railway Company had also offered some very favourable rates for deliveries to the Berlin gasworks, which Magdeburg-Halberstadt had yet to match. On 6 July 1877 Russell wrote to Kirdorf again: Magdeburg-Halberstadt had renewed their request that all shipments to the Berlin municipal gasworks, which recommenced on 1 July, go via their lines. Fatal! wrote back Kirdorf. Gelsenkirchen's Magdeburg agent had just concluded a coal supply contract with the Berlin, Potsdam and Magdeburg Railway Company, and had promised to throw some business their way. But as of 1 July all coal for the Berlin gasworks - only ten trains a week - had been going via Lehrte. Obergüter-Inspector Heine (who had complained to Russell) must have not know what he

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was talking about. Yes, Heine must have been misinformed, Russell replied; and added that Kirdorf was absolutely correct to favour Berlin, Potsdam and Magdeburg if he had just concluded a contract with them - no need to expose oneself unnecessarily.[38]

This episode is interesting for several reasons. First, it confirms how close the relationship was between the Disconto-Gesellschaft and Magdeburg-Halberstadt. It also illustrates the horse-trading, the do ut des, which must have gone on all the time. Finally, it is interesting to see how the Disconto-Gesellschaft sought to have the companies in its group, its "zaibatsu", co-operate with each other - and the limitations there often were to this co-operation. A similar episode is found in Pogge-von Strandmann's history of Mannesmann, where Nicolaus Eich of Mannesmann tried to have the Deutsche Bank give it the order to supply pipes to the Roumanian oil company Steaua Romana. In that instance too normal business considerations prevailed over the interests of the "zaibatsu": Thyssen & Co. offered to supply the tubes at 10% below Mannesmann's price, and got the order.[39]

3. Kirdorf contra Grillo

In the formation of the GBAG, as in that of the

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38. Russell, Berlin, 19 May 1877 to Kirdorf in Gelsenkirchen; Kirdorf, 21 May 1877 to Russell; Russell, Berlin, 6 July 1877 to Kirdorf in Gelsenkirchen; Kirdorf, 7 July 1877 to Russell in Berlin; Russell, Kurhaus Tarasp (Switzerland), 12 July 1877 to Kirdorf in Gelsenkirchen, BBA, GBAG Archiv, Az. 1 24 70.

39. Pogge-von Strandmann, Mannesmann, pp. 25-26.

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Dortmunder Union, the Disconto-Gesellschaft and the Ruhr magnate Friedrich Grillo met on an equal footing. This was symbolized by the establishment of a Berlin committee for finance, chaired by Hansemann, and an Essen committee for operations, chaired by Grillo. Friedrich Funke was vice-chairman of the Essen committee; the other members were Ludwig von Born of the Essener Credit-Anstalt, Theodor Movius of the Schaaffhausen'scher Bankverein, and the Cologne private bankers Freiherr Albert von Oppenheim and Jacob Löb Eltzbacher.[40] Grillo too wanted his "zaibatsu" to work together: sometimes this coincided with the interests of the Disconto-Gesellschaft, as when the administrative board meeting of 11 January 1874 urged the GBAG to conclude a long-term contract with the Dortmunder Union to supply the Union with coal.[41] On one occasion when Grillo's interests conflicted with those of the Disconto-Gesellschaft Grillo wrung a remarkable concession from Hansemann. The meeting of the Essen committee on 8 April 1873 decided that the company

> "will open an account with the Essener Credit-Anstalt, per the permission of the President (of the administrative board) Geheimer Commerzienrath von Hansemann, since its proximity offers great advantages and conveniences; it goes without saying that the chief banking connection of the company will remain the Disconto-Gesellschaft in Berlin."[42]

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40. Essener Betriebs-Comité, Sitzung, 8 April 1873 and 13 October 1873; Verwaltungsrath, Sitzung, 14 February 1874, BBA, GBAG Archiv, Az. 1 24 00, Nr. 1.

41. Verwaltungsrath, Sitzung, 11 January 1874, BBA, GBAG Archiv, Az. 1 24 00, Nr. 1.

42. Essener Betriebs-Comité, Sitzung, 8 April 1873, BBA, GBAG Archiv, Az. 1 24 00, Nr. 1.

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The Essener Credit-Anstalt, founded in 1872, was Grillo's creation, the conversion to the joint-stock form of the Essen banking house of his cousin, Ludwig von Born. Grillo deliberately chose not to seek the co-operation of the Disconto-Gesellschaft in setting up the bank, for fear lest this independent source of finance for Ruhr industry might become a vassal of the Berlin institution. It was a remarkable concession on Hansemann's part to allow the GBAG to open an account at a bank which had been set up in opposition to the Berlin bank. Grillo's position weakened after the crash, for the Essener Credit-Anstalt nearly collapsed - it wrote 40% off the shares it held for its own account in 1873, and a further 96½% in 1873-1878. Ludwig von Born was thrown out of the bank in a stormy shareholders' meeting in 1874, although he did not leave the administrative board of the GBAG until 1886.[43]

Grillo and Funke, veteran Gewerken (shareholders of a Gewerkschaft), were more accustomed to the extensive control over day-to-day operations which Gewerken enjoyed (logically enough, since they were liable to their last collar stud if anything went wrong) and unused to the separation of investor from manager of the new public limited companies. They regarded the management (Vorstand) as "so-called directors"; in their view, they were the managers. In this attitude they were not alone: similar conflicts between

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43. Walther Däbritz, Denkschrift zum Fünfzigjährigen Bestehen der Essener Credit-Anstalt in Essen (Essen, 1922) pp. 54-57 and Appendix; Freundt, Kirdorf, pp. 12-13; GBAG Festschrift 1913, Appendix 5.

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Adelbert Delbrück, the president of the supervisory board of the Deutsche Bank, and Georg von Siemens, its managing director, are well documented. Only the revision of the German companies act in 1884 introduced the sharp separation between supervisory board and management which is now characteristic of German company structure. In the GBAG matters were further confused by the Essen committee's mandate to oversee day-to-day operations.[44]

Matters became worse when the mining engineer August Demmler left to return to France, and Grillo felt more entitled to interfere in the technical running of the mine, partly because Kirdorf as commercial director (kaumännischer Director) theoretically should have concentrated on sales, finance, and accounting.[45] Kirdorf began to see Grillo's hand everywhere. The GBAG had hired as their sales agent in Riga a man recommended by the Dortmunder Union (i.e. Russell); but he was then lured away by a better offer which Kirdorf suspected came from "Consolidation" or "Dahlbusch", in other words one of Grillo's mines. (Although "Consolidation" definitely was a Grillo mine, Wilhelm Kesten's thorough history of "Dahlbusch" shows no involvement by Friedrich Grillo, so in that respect

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44. Bacmeister, Kirdorf, pp. 21, 46; cf. Karl Theodor Helfferich, Georg von Siemens. Ein Lebensbild aus Deutschlands grosser Zeit (Berlin, 1933) vol. 1, pp. 319-329; Fritz Seidenzahl, Hundert Jahre Deutsche Bank 1870-1970 (Frankfurt/Main, 1970) pp. 27, 29.

45. Bacmeister, Kirdorf, p. 46.

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Kirdorf's belief was unjustified.)[46] In November 1876 Kirdorf gave vent to another cry of "Höchst fatal!" because the "Essen gentlemen" were opposed to his proposal to set up a cokery.[47]

In the meantime, however, the conflict between Kirdorf and Grillo climaxed and was decided in Kirdorf's favour. According to Freundt and Bacmeister (writing at Kirdorf's behest in the 1920's and 1930's), after Demmler's departure the works managers (Betriebsführer) began to act on their own and place their own orders with suppliers. Kirdorf told them to stop, whereupon they appealed to Grillo, who upheld them. A slightly different account emerges from the documents, which does not necessarily exclude the Freundt-Bacmeister version. In a letter of 1 May 1876 Kirdorf complained to Russell that Grillo was interfering in personnel matters at the colliery, undercutting Kirdorf's authority. Hoffmann (presumably one of the Betriebsführer), backed up by Grillo, wanted to grant some concessions to the overmen (Obersteiger); Kirdorf, backed up by Russell, did not. The miners resented Kirdorf; Kirdorf believed that Grillo must have turned the miners against him, because Kirdorf said that he had always been very gentle with the miners. If it continued like this, Kirdorf would have no choice but to give up a position he had grown to love.

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46. Kirdorf, Gelsenkirchen, 9 March 1876 to Russell, BBA, GBAG Archiv, Az. 1 24 70; Wilhelm Kesten, Geschichte der Bergwerksgesellschaft Dahlbusch (Essen, 1952); Gebhardt, Ruhrbergbau, pp. 116-118, 147-149.

47. Kirdorf, 14 November 1876 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

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Russell wrote back the very next day. The next full meeting of the administrative board, he promised, would solve the problem in a way which would meet with Kirdorf's full satisfaction. Russell was leaving Berlin in a few days to go to Elberfeld with Hansemann to arrange some business with the Berg-Mark Railway; he would then return to Dortmund, where he and Kirdorf could talk the matter over.[48]

According to Bacmeister, Kirdorf's hint he might leave the GBAG was no idle threat: Kirdorf was negotiating with Louis Baare of the Bochumer Verein about entering its management; he was also talking with Director Klönne of the Deutsche Bank about becoming General Director of Siemens & Halske. The contacts with Baare are more than likely, since Baare made a similar offer at the same time to Wilhelm Heinrich Müller, and Müller was a friend of the Kirdorf family and served on several occasions as their private head-hunter. But Bacmeister must have garbled the story about negotiations with Siemens, since Carl Klönne did not leave the Schaaffhausen'scher Bankverein for the Deutsche Bank until 1900.[49]

Whatever happened at the administrative board meeting,

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48. Freundt, Kirdorf, p. 18; Bacmeister, Kirdorf, pp. 46-47; Kirdorf, 1 May 1876 to Russell; Russell, Berlin, 2 May 1876 to Kirdorf in Gelsenkirchen; Hansemann, Berlin, 3 May 1876 to Kirdorf in Gelsenkirchen, BBA, GBAG Archiv, Az. 1 24 70.

49. Bacmeister, Kirdorf, p. 47; Hans-Carl Scheibler and Karl Wülfrath, Westdeutsche Ahnentafeln (Weimer, 1939) vol. 1, pp. 226-228 (= Publikationen der Gesellschaft für Rheinische Geschichtskunde, vol. 44); Erich Achterberg and Maximilian Müller-Jabusch, Lebensbilder deutscher Bankiers aus fünf Jahrhunderten (Frankfurt/Main, 1963) p. 245; Seidenzahl, 100 Jahre Deutsche Bank, p. 180.

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it is not recorded in the minutes, so we must again rely on Freundt and Bacmeister. Grillo wanted the works managers to be directly subordinate to the administrative board, which would have meant directly subordinate to Grillo. Grillo and Funke wanted to fire Kirdorf. Adolph von Hansemann delivered a lecture on the legal situation, in particular the rights of the management (Vorstand) in the new public limited companies. Russell concurred with Hansemann's exposition, and concluded that what Grillo wanted was impossible. Not the administrative board, but the management had control over the works managers, and if Kirdorf wanted to fire them, he was answerable to the administrative board, but the administrative board could not stop him doing so. "You are fighting about the Emperor's beard," summed up Russell. "In a word, Herr Kirdorf is right."[50]

It is true that German company law was developing towards a definite separation of the functions of the supervisory board and the management; but until 1884 the actual law was by no means clear. Hansemann and Russell emphasized the legal situation, not because that reflected the reality, but rather to build a golden bridge for Grillo's retreat. Essentially, they meant that Kirdorf had the full confidence of the Disconto-Gesellschaft, they were not going to fire him to oblige Grillo, and Grillo had better reconcile himself to that fact.

And Grillo was reconciled. A few days later he met

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50. Freundt, Kirdorf, p. 18; Bacmeister, Kirdorf, p. 47.

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Kirdorf at the mine, and it was as if nothing had ever come between them. As Bacmeister puts it: "A 'Kerl' had shown him his teeth. That won Grillo's respect."[51] The two men worked together extremely closely and harmoniously in the series of mergers of the GBAG in the 1880's. In later years Kirdorf would still refer indirectly to his conflict with Grillo, describing Grillo as not as far-seeing as Hansemann and Russell. But the histories of the GBAG, which were written in close contact with Kirdorf, always give Grillo his full due and usually reproduce Grillo's portrait.

4. Consolidation and Expansion

As Grillo had shown when he formed the appropriately named "Consolidation" in 1863, mining consolidation had numerous advantages, and these consolidations foreshadowed the more large-scale mining mergers after 1880. On 27 October 1877 the Oberbergamt (the Prussian mining regulatory authorities) approved the consolidation of the GBAG's two mines under the name "Vereinigte Rhein-Elbe und Alma". The immediate cause was that from 1876 the GBAG had been mining "Alma's" gas coals from the second level on "Rhein-Elbe"; consolidation permitted this to continue without specific permission from the Oberbergamt.[52] A second reason was prestige: in the last two years of separate operation, 1876 and 1877, "Alma" ranked third in production in the Regierungsbezirk Arnsberg, after second-place "Vereinigte

51. Bacmeister, Kirdorf, p. 47.

52. GBAG Annual Report, 1876, p. 54, and 1877, p. 3, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1.

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Präsident" and the huge "Consolidation". "Rhein-Elbe" ranked seventh in 1876, fifth in 1877. Consolidation catapulted "Vereinigte Rhein-Elbe und Alma" into first place in 1878, nudging "Consolidation" into second place, while the luckless "Vereinigte Präsident" of the Bochumer Bergwerks-Actien-Gesellschaft (another Disconto-Gesellschaft venture) ran into water problems and plummeted to eighth place. "Vereinigte Rhein-Elbe und Alma" stayed in first place until 1890, when "Consolidation" edged it out once again.[53]

A third impulse towards consolidation was the second shaft problem. Mining experts were realizing, somewhat belatedly, that it was dangerous to have only one exit from a deep mine. The annual report of 6 December 1873 of Mulvany's Prussian Mining and Ironworks Company said:

> "The second shaft should be made conditio sine qua non for every mine, as it is in England; not only to save lives through proper ventilation and the chance of escape, but also to raise greater masses of coal and especially as a reserve in the case of accidents to the pumping system of one shaft, so that the damage can be repaired without stopping the production of the entire mine."

The expense of sinking this second shaft, however, brought down the Prussian Mining and Ironworks Company. During 1874-1876 the GBAG sank a second shaft on "Rhein-Elbe", but had only one shaft on "Alma". Sinking shafts is an unpredictable and expensive operation. All that was needed was for an accident to panic the government into introducing legislation - as the accident at Hartley in Northumberland

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53. See the statistical reports in the Zeitschrift für das Berg-, Hütten-, und Salinen-Wesen im Preussischen Staate (Berlin, 1877-1891) vols. 25-39.

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had in Britain - and the company would be faced with a huge bill. By consolidating "Rhein-Elbe" and "Alma" into one mine with three shafts,the GBAG got around this problem.[54]

A fourth advantage emerged after the consolidation: this was the chance it offered to stop people, who often did not know any better, from drawing inconvenient contrasts between the quality of "Rhein-Elbe" coal and the quality of "Alma" coal. On 6 May 1878 Kirdorf wrote to Russell that customers would not take "Rhein-Elbe" gas coals, although they would take gas coals from "Alma"; yet "Alma" was actually going through a bad period. Only Paris had the good sense to take "Rhein-Elbe" gas coals with no complaints.[55] In August 1878 a notice in the Berliner Börsen-Zeitung drew attention to Gelsenkirchen's poor July results. Kirdorf admitted that this was bad in itself, not least because July had been an unusual month. But the Berliner Börsen-Zeitung had also noted that the price of "Alma's" coal was now below that of "Rhein-Elbe" coal; previously "Alma" gas coal had been the most expensive in the Ruhr. Kirdorf remarked that "Rhein-Elbe" was higher because it was supplying the Paris Gas Company; but the public did not know this and drew unwelcome conclusions. Kirdorf therefore advised that henceforth the mines be referred to only as "Vereinigte Rhein-Elbe und Alma", and

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54. Stillich, Steinkohlenindustrie, p. 162; J. A. S. Ritson, "Metal and Coal Mining 1750-1875" in: Charles Singer et al., ed., A History of Technology, vol. 4: The Industrial Revolution 1750-1850 (Oxford, 1958) p. 92.

55. Kirdorf, 6 May 1878 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

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the results not be broken down by shaft. In Kirdorf's opinion, the merger of numerous mines to form "Consolidation" had brought that mine incalculable advantages. This episode may also explain why it is not in its report for 1877, but for 1878, that the Zeitschrift für Berg, Hütten-, und Salinen-Wesen stops listing the production for "Rhein-Elbe" and "Alma" separately.[56]

In 1879, with the worst of the Depression over, Kirdorf took his first steps towards expansion: he wanted to purchase a shaft which the neighbouring mine "Holland" was about to shut down because its gas coals had run out. "Holland" was willing to sell: it needed the money to buy new equipment, and to pay back some of its share capital, since it was running out of coal. Kirdorf wanted to buy the shaft because with it Gelsenkirchen could reach the coal in the southeast corner of "Vereinigte Rhein-Elbe und Alma". Furthermore, "Holland" had hitherto dominated the Dutch market through two big customers, although recently "Consolidation" had overtaken it - as I shall shortly discuss below. But with this shaft's gas coals giving out, "Holland" would lose these customers. If Gelsenkirchen bought the shaft and mined the continuation of this vein in the "Vereinigte Rhein-Elbe und Alma" coal panel, it would naturally fall heir to these customers. Russell wrote back that it was better to wait and do nothing; if, as Kirdorf implied, "Holland" was in a state of effective self-

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56. Kirdorf, 22 August 1878 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

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liquidation, it was better to let "Holland" take the initiative. Gelsenkirchen could then pick up the shaft for next to nothing. In fact, "Holland" lasted much longer than Kirdorf and Russell expected: its main installation, "Holland 1/2", only shut down after the First World War.[57]

5. Exports

Although export contracts were not as vital for the German coal industry as they were for the British coal industry or became for the German iron and steel industry, they were still significant: the GBAG's most important contract was that with the Paris gasworks. From 1875 the GBAG also began to export to the highly competitive market of Belgium.[58] All export markets were very cutthroat: we have already seen rival collieries steal away the GBAG's agent in Riga.[59] Towards the end of 1876 Kirdorf offered the Russian sales representative office of the GBAG to Becker & Grube. Unfortunately Becker & Grube turned the offer down, and Kirdorf went to Dortmund to consult with Russell again about Russian business, writing to Russell:

> "If we do not succeed in exporting significantly next year, then prospects for our coal industry are even more dismal, since the offers for next year are already very, very cheap and with the spring prices will

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57. Kirdorf, 1 January 1879 to Russell; Russell, Berlin, 3 January 1879 to Kirdorf, BBA, GBAG Archiv, Az. 1 24 70; Gebhardt, Ruhrbergbau, p. 253.

58. GBAG Annual Report, 1875, p. 5, BBA, GBAG Archiv, Az. 1 30 00, Nr. 1; Stillich, Steinkohlenindustrie, pp. 148-149.

59. Kirdorf, 9 March 1876 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

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certainly drop still further."[60]

The most ruthless episode occurred that very same December 1876 when "Consolidation" grabbed a near-monopoly of the Dutch market. Its Dutch agent, Herr von Benningen, learned that month of a planned new tariff schedule of the Dutch Rhenish Railway Company and the Cologne-Minden Railway under which special low terms would be granted to collieries which ordered six special trains a week. Benningen found out from his uncle, who was president of the Dutch Rhenish Railway. He then snapped up most of the Dutch market by trading on this inside information, undercutting all his competitors, since freight rates from the Ruhr to Amsterdam, Rotterdam and the Hague were only 44, 45, 46 marks for him, as opposed to 52 marks for them. "Holland", which had hitherto dominated the Dutch market, learned of the new tariff schedule only in January, but was able to confirm its two biggest customers, so that it was assured of six extra trains a week. The other two collieries which previously had had a big share of the Dutch market - Hibernia and Gelsenkirchen - were now shut out.[61]

6. The GBAG and the Disconto-Gesellschaft

If there was one matter in which the GBAG was totally in the hands of its bankers, it was deciding how to invest its large cash reserves. In advising the GBAG, the

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60. Kirdorf, 11 December 1876 to Russell in Dortmund; Kirdorf, 12 December 1876 to Russell in Dortmund, BBA, GBAG Archiv, Az. 1 24 70.

61. Kirdorf, 1 March 1877 to Emil Russell, BBA, GBAG Archiv, Az. 1 24 70.

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Disconto-Gesellschaft acted in a very correct and loyal fashion. In May 1878 Russell recommended that Kirdorf invest his large current account surplus of 1.3 million marks in some sound securities: securities of the Reich, of Prussia, or of railway companies taken over by the kingdom of Prussia. Kirdorf agreed, and Russell recommended the purchase of 500,000 marks nominal 4% Prussian consols, first because there had just been a new issue, so the price was still relatively depressed, the securities "could still be had at favourable terms" and a huge order of this size would not force up the price; secondly, the market in Prussian consols was the most liquid of any security, and thus least exposed to violent price fluctuations. Kirdorf answered:

> "For your advice of yesterday let me express my deepest thanks. I am all the more obliged to you, since here we are too unfamiliar with practices of the stock exchange and so would not have known what government security we should propose to our president [of the administrative board, i.e., Hansemann]."[62]

This incident reflects very well on Russell and the Disconto-Gesellschaft. True, the Disconto-Gesellschaft doubtless had 4% Prussian consols in its underwriting portfolio which it wanted to clear out. But clearly it was in the Disconto-Gesellschaft's interest that the GBAG keep its current account in credit for as long as possible, on which it would pay say 2½%; the Disconto-Gesellschaft could then invest in Prussian consols, and pocket the

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62. Russell, Berlin, 5 May 1878 to Kirdorf; Kirdorf, 6 May 1878 to Russell; Russell, Berlin, 20 May 1878 to Kirdorf; Kirdorf, 21 May 1878 to Russell, BBA, GBAG Archiv, Az. 1 24 70.

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difference. Its investment recommendation was also a very sound, gilt-edged security. The Disconto-Gesellschaft, in fact, recommended at its own initiative that the GBAG take a measure which was probably to the Disconto-Gesellschaft's disadvantage.

As the head of a successful company Kirdorf was in a very strong position; and he began to reap the benefits. In 1879, as the gloom that had hung over the coal market finally began to lift, he asked for and received an increase in his annual bonus (Tantième).[63] And the Disconto-Gesellschaft appreciated Kirdorf's mastery. In 1883, as the roller coaster of the conjuncture began to dip again, Kirdorf was quick to spot the decline in orders. The Disconto-Gesellschaft partner Alfred Lent wrote to Kirdorf:

> "Like you I hope the sluggish demand will be transitory in nature. At any rate Gelsenkirchen has a difficult year ahead of it, which will require all your energy and circumspection, which have helped us so often in the past."[64]

F. Conclusion.

The Kirdorf-Russell correspondence has much in common with those other dialogues between managers and their supervisory boards which are known to us: Eich/Steinthal at Mannesmann, and Hasslacher/Salomonsohn at the Rheinische

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63. Kirdorf, 7 February 1879 to Russell; Russell, Berlin, 9 February 1879 to Kirdorf at "Rhein-Elbe"; Hansemann as president of the GBAG administrative board, Berlin, 11 March 1879, to Kirdorf at " Ver. Rhein-Elbe + Alma", BBA, GBAG Archiv, Az. 1 24 70.

64. Alfred Lent, Berlin, 11 June 1883 to Kirdorf, BBA, GBAG Archiv, Az. 1 24 70.

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Stahlwerke.[65] In the GBAG's acquisition phase after 1880, the Disconto-Gesellschaft (and Friedrich Grillo) acted as intermediaries in the same way as the bankers acted as intermediaries in planning mergers at the Rheinische Stahlwerke. So far as the question of control goes, the correspondence confirms the findings of Pogge-von Strandmann and Mosse: the final decision remained with the manager of the industrial company. There is a difference of degree, however: Russell was much more deeply involved in Gelsenkirchen's affairs than was the case with Steinthal or Salomonsohn, because of three special factors. First, the unclear legal situation before 1884. Secondly, Kirdorf's youth (he only turned thirty in 1878) and relative inexperience. Finally, Russell's peculiar double position as partner of the Disconto-Gesellschaft and General Director of the Dortmunder Union meant that he had a technical knowledge of Ruhr heavy industry which Steinthal and Salomonsohn could not claim. Russell occasionally exerted pressure in favour of the Disconto-Gesellschaft's interests - he wrote two letters on behalf of the Magdeburg-Halberstadt Railway - but the final decision as to whether to send coal via Stendal or via Potsdam remained with Kirdorf. The settlement of the conflict with Grillo confirmed Kirdorf's freedom of disposition. Kirdorf's position was strong because his company was strong. With weak companies, like the Dortmunder Union or the Mengeder Bergwerks-Actien-

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65. Pogge-von Strandmann, Mannesmann; Mosse, Jews in the German Economy, pp. 263-267.

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Gesellschaft, on the other hand, the gloves came off and the Disconto-Gesellschaft intervened extensively. This is not that different from the situation in Anglo-Saxon countries; what is unusual is the degree of this interference, most peculiarly the Disconto-Gesellschaft's willingness to second its own managers to industrial companies, such as David Hansemann at the Phoenix or Emil Russell at the Dortmunder Union.

The GBAG is unusual in that it is a successful industrial venture of the Disconto-Gesellschaft. One reason for that success was that "Rhein-Elbe" and "Alma" were themselves superb properties. But another very important reason was that in Emil Kirdorf the Disconto-Gesellschaft found a first-rate manager who did not mind being nominally subordinate to a Berlin bank. This is surprising in view of Kirdorf's notoriously choleric nature; but if Kirdorf's anger was fierce, so were his loyalties. This, and the clearly great talents of Emil Russell as an intermediary, helped create a very successful managerial relationship and one of the most successful companies in Europe.

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VI. Conclusion.

The thesis above has attempted to remove some of the aura of success which has surrounded the German universal banks. The story of the rise of German industry in the nineteenth century certainly is a success story - but it is a story in which too much of the credit for success has been given to the universal banks. I have discussed the ventures of only one bank, the Disconto-Gesellschaft, albeit a bank which was always in the top two joint-stock banks during 1851-1914; but Paul Model's work on the Berlin banks (based on the annual reports) suggests that there would be few records of outstanding successes among true universal banks like the Dresdner Bank, the Bank für Handel und Industrie and the Schaaffhausen'scher Bankverein to offset the Disconto-Gesellschaft's failures.[1] The Deutsche Bank and, after 1883, the Berliner Handels-Gesellschaft certainly were successful; but neither, I would argue, was a true universal bank. I have here been able to examine in detail only three Disconto-Gesellschaft ventures; although I have studied most of the others. The Dortmunder Union was the most common case; I have indicated above that although they were never on such a large scale, the Harzer Union, the lead mines "Bertha Isabella", "Neue Hoffnung", and the Commerner Bergwerks- und Hütten-Actien-Verein, the collieries Mengeder Bergwerks-Actien-Gesellschaft and the Bochumer Bergwerks-Actien-Gesellschaft, the Brunswick Railway Company, the

1. Paul Model, Die grossen Berliner Effektenbanken ed. Ernst Loeb (Jena, 1896).

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Crefeld-Kempen district railway, the Great Venezuela Railway and the Internationale Druckluft- und Electricitäts-Gesellschaft were similarly disastrous. The history of Krupp shows the problem from the entrepreneur's point of view: Krupp had unhappy experiences with Oppenheim, Herstatt, the Schaaffhausen'scher Bankverein and the Disconto-Gesellschaft until he finally found firm support in the houses of Deichmann and Meyer-Cohn. Finally, Gelsenkirchen shows how banks and industry could work together at their best and is one of the two unqualified industrial successes of the Disconto-Gesellschaft - the other being the Kaliwerke Aschersleben. Kirdorf and Russell's successful working relationship between industrialist and banker is not unique in German company history: parallel examples are the dialogues between Nicholaus Eich of Mannesmann and Max Steinthal of the Deutsche Bank, between Jacob Hasslacher of the Rheinische Stahlwerke and Arthur Salomonsohn of the Disconto-Gesellschaft. These companies have rich archives and these dialogues have survived partly because these companies were successful. Fremdling and Tilly have proposed that research into the relationship between industrial companies and universal banks begin by basing itself on the great company archives (Mannesmann, Krupp, Siemens, Gelsenkirchen).[2] This suggestion is excellent, but it contains the danger that we will end up with a misleading number of success stories, and

2. Rainer Fremdling and Richard Tilly, "German Banks, German Growth, and Econometric History" in: The Journal of Economic History (New York, June 1976) vol. 36, pp. 416-424.

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in viewing the peaks of Mannesmann and Gelsenkirchen we will not see the financial quicksands of the Crefeld-Kempen district railway, the Mengeder Bergwerks-Actien-Gesellschaft, or even the Dortmunder Union.

I see two sets of reasons emerging from the above study as to why universal banks found it difficult to select and finance industrial companies, and why private banks were more successful at this. First, there was a clash of management styles. Commercial banking is well suited to a bureaucratic style of management: many of its problems can be reduced to routine paper work. The Disconto-Gesellschaft was managed in a very bureaucratic fashion. But this caused clashes with less inhibited entrepreneurs, most outstandingly Krupp, who would overdraw his account with little regard for financial punctilio. Entrepreneurs dislike being subordinated to a bureaucratic monolith - it is notable how many talented men (Müller, Adolf Kirdorf, Jucho, Klönne) chose to leave the Dortmunder Union. This helps explain not only why the Disconto-Gesellschaft financed so many disastrous enterprises, but also why it financed so many mediocre and second-rate enterprises. In the Eifel lead-mining industry, for example, it did not finance the Mechernicher Bergwerks-Verein, managed by the skilled Kreuser brothers (the Kreusers obtained funds from the Cologne private bank Seydlitz & Merkens instead) but rather the second-rate Commerner Bergwerks- und Hütten-Actien-Verein. This helps explain why so much money and effort went into the mediocre Phoenix, instead of going to Krupp.

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(The bankers also seem to have favoured the Phoenix over Krupp because they had more control over the Phoenix than over the idiosyncratic Krupp.) This further helps explain why the Disconto-Gesellschaft and so many other major banks devoted so much time and money to the Union Electricitäts-Gesellschaft, which was always a poor third after Siemens and A. E. G. Many of the most successful entrepreneurs, like Friedrich Grillo, August Thyssen, and the Mertons of the Frankfurt Metallgesellschaft did not deal with any one bank, but preferred to keep the banks at arm's length by playing them off against each other. An unfortunate result has been that often the most successful captains of industry in Germany have not had any particular talent for industry or marketing, but rather were skilled at handling the banks. We only have to contrast the banks' treatment of Alfred Krupp with the way they fell over each other in their rush to lend money to Dr. Strousberg. Bethel Henry Strousberg, Hugo Stinnes, and Friedrich Flick were superb financial manipulators, but all too often had no feeling for industry.

The less bureaucratic and more entrepreneurial style of private banks often proved better suited to financing industry. The great strength of the financial system in Germany in the nineteenth century was the vast number of private banks. This is the second reason for the poor record of the universal banks, and the better record of the private banks. A Krupp could go on knocking on doors until he found one opened by Deichmann or Meyer-Cohn. A paradoxical advantage was that private banks had narrow

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capital bases. It was not unusual for a private bank to be brought under by a poor investment: Strousberg brought down Jos. Jaques in 1875, Wilhelm von Born went bankrupt in 1885 for undisclosed reasons, the problems of the Allgemeine deutsche Kleinbahngesellschaft compelled Jacob Landau to merge into the Nationalbank für Deutschland in 1898. A private bank could not keep alive a Dortmunder Union, and companies which should have gone under, went under. A private bank could not, like a universal bank, attempt to turn a disastrous company into a mediocre one. The large number of private banks meant that eventually a good entrepreneur could find one to provide him with venture capital. Their narrow capital bases meant that they could not keep bad companies alive. Both these characteristics were advantages.

It has hitherto been assumed that universal banks played a major role in the rapid rise of German industry in the nineteenth century. The history of the Disconto-Gesellschaft suggests that this role was by no means as successful as is commonly assumed, and that we should turn our attention to other investors, such as foreign capital, merchants, and private bankers, in trying to explain the industrial revolution in Germany.

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ABSTRACT

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The Disconto-Gesellschaft and German Industrialization: A Critical Examination of the Career of a German Universal Bank, 1851-1914.

This thesis uses the history of the Disconto-Gesellschaft to argue that the role of universal banks in fostering German industrialization was less than has previously been assumed. The archive of the Disconto-Gesellschaft is not currently accessible, so the thesis will use industrial archives to examine the bank's relations with industrial companies. After a discussion of the literature, a summary of other Disconto-Gesellschaft ventures shows that the Dortmunder Union was not an isolated disaster, but one among many. The thesis discusses the boom of 1867-1873 and suggests it was engendered by a spate of railway building which fed into heavy industry. The next section recounts how the collapse of universal banks during financial crises led most countries outside Germany to separate commercial from investment banking either by law or by custom. The first chapter concludes with a discussion of how German industry raised capital.

The second chapter discusses the origins of the Disconto-Gesellschaft; David Hansemann's introduction of a new corporate form, the Kommanditgesellschaft auf Aktien; the Disconto-Gesellschaft's rise during the crisis of 1859, relations with competitors, internal structure and the character of its management and supervisory board. The third chapter treats the history of the Dortmunder Union, and the reasons for its failure. The fourth chapter discusses Krupp's difficulties in raising funds; how the Disconto-Gesellschaft coped with the problem of lending to two competing firms, Krupp and the Union; and the management of this conflict through the rail cartel. The fifth chapter uses the correspondence of Kirdorf and Russell to discuss the coal industry's plight in the 1870's, and the reasons for the success of the Gelsenkirchener Bergwerks-Actien-Gesellschaft. The conclusion suggests that private banks were more successful in financing industry than universal banks like the Disconto-Gesellschaft because their great number meant that even a Krupp could find a private banker who believed in him, and because their narrow capital bases prevented them from keeping lame ducks alive.

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Long Abstract: The Disconto-Gesellschaft and German Industrialization: A Critical Examination of the Career of a German Universal Bank, 1851-1914. Thesis submitted for the Degree of Doctor of Philosophy in the University of Oxford by John M. Kleeberg, St. Catherine's College, Oxford, Michaelmas 1987.

The thesis that follows re-examines the role of German universal banks in fostering German industrialization. A "universal bank" combines the functions of commercial and investment banking. The traditional view holds that universal banks contributed greatly to Germany's industrial development. This thesis examines one of the major German universal banks, the Direction der Disconto-Gesellschaft, and comes to the opposite conclusion.

First reactions to the Crédit Mobilier and other universal banks were hostile, but they found new champions after 1902 in Adolf Weber, Johann Plenge, and Jacob Riesser. The debate has revived in recent years. Neuburger and Stokes used the current account figures worked up by Ekkehard Eistert and analyzed them econometrically, concluding that the overall contribution of German universal banks was negative. Although these conclusions parallel my own, their work does not inspire total confidence and Fremdling and Tilly's critique is fairly telling. Most recently Richard Tilly has made use of portfolio theory and argued that the portfolio of funds supplied by banks to their current account customers corresponds very closely to an ideal portfolio of the German economy. Unfortunately Tilly's surrogate for banks' current account portfolios— new issues admitted to the Berlin stock exchange— is probably somewhat removed from actual bank lending patterns. Stripped of these assumptions, Tilly's results give a conclusion which is compatible with my own view: universal banks were not successful at fostering Germany's economic growth. Private banks, however, were very good at choosing new companies and knowing which ones to introduce to the bourse; and this is demonstrated by Tilly's portfolio of new

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issues on the Berlin bourse 1883-1913, which approximates very closely to an ideal portfolio for the German economy.

There were nine big Berlin banks in 1913: the Deutsche Bank, the Disconto-Gesellschaft, the Dresdner Bank, the Bank für Handel und Industrie (Darmstädter Bank), the Berliner Handels-Gesellschaft, the Schaaffhausen'scher Bankverein, the Nationalbank für Deutschland, the Commerz- und Disconto-Bank, and the Mitteldeutsche Credit-Bank. The last three were much smaller than the rest; the Deutsche Bank and the Berliner Handels-Gesellschaft were not true universal banks for much of this period; and the Bank für Handel und Industrie and the Schaaffhausen'scher Bankverein were not particularly successful. The Dresdner Bank would repay further study. The Disconto-Gesellschaft was a true universal bank; it had a reputation for success; and it was one of the two largest German joint-stock banks throughout the period 1856-1914. Unfortunately the archive of the Disconto-Gesellschaft is not currently accessible; so the thesis will use industrial archives to examine the Disconto-Gesellschaft's relationship with industrial companies. After a treatment of the literature, a summation of other Disconto-Gesellschaft ventures shows that the Dortmunder Union was not an isolated catastrophe, but that the Harzer Union, the Mengeder Bergwerks-Actien-Gesellschaft, and the Bochumer Bergwerks-Actien-Gesellschaft, to name but three, were similarly disastrous.

The thesis will concentrate on heavy industry. This is a problem because returns from heavy industry are usually low; but this concentration on heavy industry is a bias which can be observed in the Disconto-Gesellschaft's general investment policy. Another emphasis will be the boom and crash of 1867-1873. The dissertation suggests that this was engendered by a spate of railway building in Germany, Austria-Hungary, and the United States, rather than

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superficial elements such as the German public limited company law of 1870 or the French indemnity for the war of 1870. The section that follows discusses why Germany has universal banks and other countries do not. The Overend, Gurney crisis of 1866 and the collapse of the Crédit Mobilier in 1867 confirmed an informal separation between commercial and investment banking which already existed in France and England. Italy, the United States, and Belgium enacted laws to enforce this separation in response to the world economic crisis of 1929-1933. Finally, MacArthur introduced the American law into Japan after 1945. Responses to certain specific crises have led most other countries to enact by law or by custom a separation of investment and commercial banking.

The final section of the first chapter tries to answer a question which naturally arises: if it was not universal banks who financed Germany's economic growth, where did this money come from? After discussing some not wholly satisfactory statistical approaches based on subscriptions to capital increases and attendance at annual general meetings, the section then proceeds to give a general picture. Industrialists raised capital in the first place from re-investing profits: either from the same firm, the same industry, or from other successful investments. The second source to tap was relatives. The in-laws might then introduce the industrialist to others who had made money during the period of primitive capital accumulation before the full industrial revolution was ushered into Germany by the advent of the railways. These men could be merchants, operators of transport and conveyance enterprises (Spediteuren), textile manufacturers or even professional men. A further source was private bankers, who played a major role in financing German industry. Private bankers might then bring in joint-stock

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banks or foreign investors; but as I will argue in the thesis, the role of joint-stock banks was less than is commonly assumed. Foreign investors were extremely important, especially for the Ruhr in the 1850's.

The second chapter discusses the Disconto-Gesellschaft itself. It treats the origins of the Disconto-Gesellschaft as a co-operative credit union formed in reaction to the crisis of 1848, and how the Disconto-Gesellschaft gradually outgrew these humble beginnings. David Hansemann then converted the Disconto-Gesellschaft into a universal bank, partly to fend off imminent competition from other rivals like the Bank für Handel und Industrie, and in the process introduced a new corporate form to Germany, the Kommanditgesellschaft auf Aktien. The Disconto-Gesellschaft found itself in a very strong position during the crisis of 1859 and vaulted into the front rank of financial institutions. The chapter then discusses the rise of the Disconto-Gesellschaft in terms of its relations to its competitors, namely: Sal. Oppenheim jr. + Cie.; the House of Rothschild; S. Bleichröder; and the Norddeutsche Bank in Hamburg. The final section discusses the very bureaucratic internal structure of the Disconto-Gesellschaft; it goes on to treat the character of the supervisory board, in particular the local Berlin merchants and the government civil servants.

The third chapter discusses a specific industrial venture of the Disconto-Gesellschaft: the Dortmunder Union. It begins with the Disconto-Gesellschaft's acquisition of the Henrichshütte in 1857; the histories of the other components of the Union, namely the Dortmunder Hütte and Neuschottland; and the formation of the Union, with special attention to the roles of Friedrich Grillo and Wilhelm von Born. The chapter enumerates the works of the Union, and gives a statistical overview. The following section recounts the financial history

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of the Union-- its numerous capital reductions— and refutes the view of Hilferding, Stillich, Liefmann and Lenin that the Disconto-Gesellschaft made money out of these capital reductions; using the class "A" preference as an example, the Disconto-Gesellschaft is seen to have lost substantial sums. The chapter then turns to specific problems of the Union. First is personnel questions: a demoralized workforce, and a management, which, although it often harboured some notable talents, was so demoralized that talented men frequently left the Union. The next problem is the crippling of the outlying works, which demonstrates that the merger was a mistake from the start. The Henrichshütte is used as an example; the decline of the other works is summarized in statistics. A fourth problem was iron ore supplies; but in this the Union did not differ greatly from other German steel companies. A fifth problem was the Union's coal supplies, which were unsuited for producing coke. The peculiar history of the acquisition of the colliery "Adolf von Hansemann" is recounted, which greatly improved the Union's coke position. The chapter concludes that the Union ran into trouble in the early 1870's because of overcapitalization, stock losses, and the Disconto-Gesellschaft's plan of having the Union run at full capacity, even if it made losses. Among the Union's long-term problems were its geographical dispersion, its poor location (no water route until 1899), its technical backwardness, its bad luck with iron ore mines, its poorly-timed and ill-chosen acquisitions of collieries, its talented but demoralized managers, its vertical integration during a period of falling prices, and its insufficiently severe capital reductions. The Disconto-Gesellschaft should bear much of the blame for these problems: for encouraging the Union to operate full out even if at a loss; and for the deleterious effects of the original merger, the geographical dispersion, the vertical integration, and the

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crippling of the outlying works. The Disconto-Gesellschaft demoralized the managers through interfering in the Union's operations, and never carried out a capital reduction that was severe enough.

The fourth chapter takes a different point of view: an entrepreneur (Krupp) seeking funds for his plant. The chapter shows how Krupp met with repeated rebuffs— from private bankers like Oppenheim and Herstatt, but also from universal banks like the Disconto-Gesellschaft and the Schaaffhausen'scher Bankverein-- until he found some private bankers who believed in him, namely Wilhelm Ludwig Deichmann and Alexander Meyer-Cohn. The chapter discusses the Krupp loan of 1874, and sees how the Disconto-Gesellschaft dealt with the problem of providing funds to two competing firms, Krupp and the Dortmunder Union. At first the Union and the Disconto-Gesellschaft tried to have the Seehandlung put pressure on Krupp to stop "dumping" in Russia. When the Seehandlung did nothing, the Union sought a direct agreement with Krupp, ultimately in the formal context of the rail cartel.

The fifth chapter discusses one of the only two outstanding industrial successes of the Disconto-Gesellschaft: the Gelsenkirchener Bergwerks-Actien-Gesellschaft. After a discussion of the formation of Gelsenkirchen, its assets, and a statistical summary, the chapter gives an overview of the 1870's largely based on annual reports. It concludes that the GBAG performed well in the 1870's, when so many of its competitors suffered severely, for five reasons. First of all, "Rhein-Elbe" and "Alma" were very good properties: their coal lay well, it was the best quality gas coal, and they were very large mines. Secondly, their luck held and they were not visited by accidents. Thirdly, Kirdorf was a manager of genius. Fourthly, contracts with Paris gasworks provided Gelsenkirchen with a means of

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escape from the vicious circle of railways/ironworks/collieries. Fifthly, management and men achieved incredible productivity increases. The eighteen-seventies impressed Kirdorf with the need for price stability and multilateral controls on output—ideas which later bore fruit in the Rhenish-Westphalian Coal Cartel. The chapter then discusses special problems of this period, using Kirdorf's correspondence with Emil Russell. These special problems include the relationship with the banks; the sales to gas companies; horse-trading over coal contracts with the Magdeburg-Halberstadt and Cologne-Minden Railways; Kirdorf's struggle with Friedrich Grillo; consolidation of the two collieries to get around the second shaft problem and improve the mine's reputation; the first tentative steps at expansion, when Kirdorf suggested acquiring an old shaft of "Holland"; the struggle for export markets, notably Paris, Belgium, Riga, Petersburg, and a outthroat contest for the Dutch market; and the investment of the GBAG's cash surplus. The Kirdorf/Russell correspondence shows a relationship between industrialist and banker similar to those of Eich and Steinthal at Mannesmann or Hasslacher and Salomonsohn at the Rheinische Stahlwerke. But although the freedom of disposition remains with Kirdorf, Russell can and does intervene more extensively than do Steinthal or Salomonsohn, because of the ambiguous legal situation before the reform of the company law in 1884; because of Kirdorf's youth and inexperience; and because, as General Director of the Dortmunder Union, Russell had a technical knowledge which neither Steinthal nor Salomonsohn could claim.

The conclusion emphasizes once again the remarkable lack of success which the Disconto-Gesellschaft met with in financing German industry, and suggests two reasons why private bankers were better at this than universal banks. First of all, the multiplicity of

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private banks meant that if Oppenheim or Herstatt rejected Krupp, Krupp could go on knocking on doors until he found one opened by Deichmann or Meyer-Cohn. Secondly, the narrow capital bases of the private banks prevented them from throwing good money after bad as the Disconto-Gesellschaft did with the Dortmunder Union.

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